

Additional chart coverage may be found in CATP2, Catalog of Nautical Charts. $SECTOR~{\bf 3} \longrightarrow CHART~INFORMATION$

SECTOR 3

COAST OF PERU

Plan.—This sector describes the coast of Peru from Canal de Jambeli, at the Ecuador/Peru boundary, to the Peru/Chile boundary, including the off-lying islands. The sequence of the description is from N to S.

General Remarks

3.1 The coast trends about 100 miles S from Cabo Blanco to Punta Falsa and is indented by several bights, the S and largest of which recedes about 15 miles E to form Bahia de Sechura. From the S end of the Punta Aguja headland, the coast trends SSE for about 665 miles to Punta Dona Maria, where it turns and trends almost 400 miles in a more ESE direction to Arica. The coast is quite regular in outline, with small bights fit only for small vessels with local knowledge, and a few deep-water bays large enough for ships.

Most of the Peruvian coast consists of a very low, narrow desert plain made arable in places by irrigation. The coastal plain varies between 1 to 50 miles wide and is backed inland by the great range of the Andes Mountains. Spurs of the mountains rise abruptly from the coast in some places, and sandy beaches, interrupted by points, and small rivers are common.

Generally, the coast is steep-to with depths of 11 to 91.4m less than 3 miles offshore. Above and below-water dangers fringe many parts of the coast, and shorebanks extend up to 3 miles offshore and 6 miles off the E shore of Bahia de Sechura.

Caution must be exercised because of the lack of sufficient soundings along many parts of this coast and the possibility of uncharted dangers. In addition, the charts have been reported not to conform with the actual coastal configuration in a number of places.

Note.—See Pub. 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia for details on regulations pertaining to vessels entering Peruvian waters.

It is reported that all foreign vessels regardless of type or tonnage, entering waters within 200 miles of the coast, must participate in the Peruvian Maritime Information System on Position and Safety. Details are found in Pub 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia.

Oil fields.—Oil fields may be encountered off this coast from a point NW of Punta Mapelo (30°30'S., 80°20'W.) to a position S of Punta Parinas (4°40'S., 81°20'W.). Rigs, production platforms, submarine pipelines, and various other forms of hazard may be associated with these oil fields, some of which may be lighted. Vessels are urged to exercise the appropriate caution when navigating along this portion of the coast. Peruvian authorities advise that oil platforms may be met between the parallels of 3° and 5°S.

Winds—Weather.—Close to the coast of Peru and N Chile, winds are predominantly S to SW throughout the year. From September through December, when there is a marked contrast between sea and land temperatures, the winds known locally as "virazon" increase in strength to such an extent as to hinder the

loading and discharging of ships cargoes. Winds vary considerably over the ocean off the Peruvian coast as a result of the movement N and S of the doldrums belt. Gales are rare off the Peruvian coast.

Humidity prevails throughout the year along the almost rainless coast of Peru. At Lima, the relative humidity averages over 90 per cent throughout the year during the early morning hours. At Arica, where it seldom rains, the humidity averages 76 per cent. Fog occurs frequently along this coast from the latter part of December to the end of April.

Temperatures along the coast of Peru become cooler than other areas near the Equator because of the Humboldt Current flowing N. The prevailing coastal winds carry warm surface water away from the coast, bringing to the surface the cool waters from below.

Tides—Currents.—The currents off the coast of Peru are influenced by the Peru Current, which predominates along this coast, and to a lesser extent by the El Nino Current. In general, the current sets N parallel to the coast of Peru at a rate of about 0.5 to 1 knot. It is strongest between Punta Falsa and Puerto Eten and between Punta San Juan and Mollendo. A S set of equal or greater strength occurs occasionally and suddenly at any time of year, and it does not necessarily follow a change of the wind to a N direction. Currents setting S parallel to the coast and close inshore have been encountered, particularly off Cabo Blanco, Isla Lobos de Tierra, and between Callao and the Peninsula de Paracas. The S set of the Holy Child Current sometimes extends as far S as Punta Dona Maria, but usually it has little effect S of Golfo de Guayaquil.

Currents of a local nature are described in the various parts of this sector with the features off which they occur. Tidal currents are similarly described.

Discoloration of the water, known as "aguaje," may be encountered on the Peruvian coast.

Caution.—Navigating, anchoring, and fishing are prohibited within 0.5 mile of offshore tanker moorings and buoys used for the loading and discharging of inflammable liquids along the Peruvian coast.

Canal de Jambeli to Punta Falsa

3.2 Between **Isla San Gregorio** (3°19'S., 80°16'W.), the S entrance point of Canal de Jambeli, and Cabo Blanco, about 82 miles SW, the coast is indented by numerous bays and inlets. A light is exhibited close SW of Punta Payana.

Punta Capones, about 4.5 miles SSW of Punta Payana, is located on the S side of a channel which forms part of the border between Ecuador and Peru. A light is shown from the point.

Bahia de Tumbes lies between Punta Capones and Punta Malpelo, about 12 miles SW.

The mouths of the Rio Tumbes lie within a delta which extends from Punta Malpelo, about 6 miles E to Puerto Pizarro, situated in the S part of the bay. Small craft can navigate the

river as far as the town about 5 miles upstream. Local knowledge is required.

Anchorage can be taken about 3 miles ENE of Punta Mapelo and 1 mile offshore, in depths of 9.1 to 11m.

Caleta La Cruz, a small cove, is located about 10 miles SW of Punta Malpelo. A light is shown from a jetty and a prominent water tank is situated at the fish factory. Three lighted platforms are situated about 10 miles offshore from Punta Malpelo to Punta Mero. Anchorage can be taken about 2 miles offshore, in depths of 8 to 10m, sand.

3.3 Contralmirante Villar (Puerto Zorritos) (3°40'S., 80°40'W.) (World Port Index No. 15220), situated about 6 miles SW of Caleta La Cruz, occupies a cove between Punta Santa Rosa and Punta Sechwita, 1.5 miles WSW. The small port can be contacted by VHF. Oil derricks and tanks are conspicuous from the offing, and a pier, in ruins, extends off Punta Santa Rosa. Sunken wrecks lie 0.5 mile WNW and 0.2 mile WSW of the point. There is a jetty, 180m long, 0.1 mile E of Punta San Rosa.

Mooring buoys lie off the pier head. Most of the port activities have been transferred to Caleta Los Organos, about 9 miles NE of Cabo Blanco. Anchorage can be taken, in 5.5 to 9.1m, up to 1 mile off Punta Santa Rosa. A light is shown from a black and white banded tower close SW of Contralmirante Villar.

The coast SW of Contralmirante Villar is both sandy and cliffy, with several small coves used by small local vessels. Detached mountains rise inland in some areas. Caleta Mero is located about 15 miles SW of Contralmirante Villar. This cove, which is moderately sheltered, has anchorage, in depths of 9 to 12m, sand. Care should be taken to avoid the obstruction situated about 1.5 miles offshore.

Los Organos (4°15'S., 81°08'W.) is a village at the E end of a cove situated about 40 miles SW of Contralmirante Villar. Two tanks and several buildings are prominent. A disused submerged oil pipeline, surrounded by a prohibited anchorage area best seen on the chart, extends about 0.5 mile NW from the shore.

It is reported that a jetty extends from the shore, but is out of use.

3.4 Punta Cabo Blanco (4°16'S., 81°15'W.), about 7.5 miles SW, is a guano-covered bluff which rises to an elevation of 275m. A main light is shown at the cape. The cape, sloping gradually seaward, has two sharp hillocks near its extremity. Above and below-water rocks lie 0.2 mile off the cape. Oil tanks are conspicuous at the town of El Alto, situated on the heights above the cape, about 1.3 miles SE. At night, gas flares and the lights of the town are visible for many miles seaward.

Monte Organos, about 422m high, stands 7.5 miles E of Cabo Blanco. The W side of the mountain resembles a pipe organ.

Puerto Cabo Blanco (4°16'S., 81°15'W.) (World Port Index No. 15210) is a small port situated on the NE side of Cabo Blanco and a chief exporter of crude oil from El Alto, but is also a sport fishing center. The port is an open roadstead, sheltered from the S and partly from the SW, but exposed to N weather. There are four mooring buoys in 11.3m, 910m offshore.

Winds—Weather.—Except for December through February, the prevailing wind is SE in the morning and SW in the afternoon. In winter, showers may occur in early morning, but by noon the weather is clear.

Tides—Currents.—The tidal range is about 1.2m; the spring range is 1.5m. The current sets N except in summer, when it shifts to SSE.

Depths—Limitations.—A pier, at least 183m long and marked at its head by a light, extends N from a point ashore about 0.3 mile E of Cabo Blanco. A submarine oil pipeline, marked at its seaward end by a lighted buoy, extends about 0.2 mile N from the pier. There are depths of 14.6m in the berth at the outer end of the pipeline. Mooring buoys are laid NW of the pierhead and N of the oil pipeline. It is reported that generally ten hawsers, five forward and five aft, are required for mooring. Vessels up to 35,000 dwt, with drafts up to 12.2m, can be accommodated at the berth.

Anchoring in the vicinity of the pipeline is prohibited.

Pilotage.—Pilotage is compulsory. The pilot boards about 2 miles N of the berth. Vessels will be moored only during daylight, but can be unmoored at night. The port is under the jurisdiction of the port captain at Talara, from which customs officials and the pilot are supplied. The pilot can be contacted by VHF channel 16.

Caution.—A wreck is reported (1994) to lie approximately 6.8 miles W of Punta Cabo Blanco.

An obstruction lies 1.8 miles NNW of the pier.

Numerous platforms, lit and unlit, are scattered which extend to about 6 miles offshore lying within 100m contour.

3.5 Punta Lobos (4°27'S., 81°18'W.) lies about 12.5 miles SSW of Cabo Blanco. The coast between is indented by shallow bights separated by cliffy points that are fronted by rocks and foul ground up to 0.5 mile offshore.

A small jetty situated at Pena Negra, about 1.8 miles SSW of Cabo Blanco, is used by small craft employed by the oil company.

Caleta Lobitos (4°27'S., 81°17'W.) (World Port Index No. 15200) is small port, also named Puerto Lobitos, and situated in a bight between Punta Folch (4°27'S., 81°17'W.) and Punta Lobitos (4°27'S., 81°18'W.). The port includes a roadstead NW of the bight. Conspicuous oil derricks, oil storage tanks, and buildings of the town of Lobitos stand along and within the shores of the bay.

The approach to port is free of all known dangers, except for several charted 10.1 to 11m patches lying close seaward of the 10m curve. Submerged rocks and reefs lie close off Punta Lobitos. Breakers are visible at least 0.3 mile off the point. There are depths of less than 5.5m as far as 0.4 mile off the SW side of the bight. Weather and current conditions are similar to those at Puerto Cabo Blanco, except for very heavy swells from January to March.

A pier, with a depth of 7m at its head, extends NW from shore at the town and is used by local fishing craft.

Anchorage.—Anchorage may be taken about 1 mile NW of the jetty head, in depths of 12 to 18m, but the anchorage lies within an oil field area.

Caution.—An oil field, in which there are numerous structures, some carrying lights, is situated off Caleta Lobitos.

Vessels should give this part of the coast a wide berth on account of the oil field.

The coast in the vicinity of Punta Lobos (4°28'S., 81°18'W.) is cliffy, but becomes low between Punta Capullana and Punta Malaca (4°32'S., 81°17'W.); then to Talara, is closely backed by a plateau with several high hills. Isla Sheba lies on a reef fringing Punta Yapato, about 1.3 miles S of Punta Lobos, and is reported to be conspicuous. The coast, fronted by rocky shoals and foul ground, should not be closed within 3 miles as there are detached patches of less than 7.3m. Roca Miguel Angel, submerged, is charted 1.7 miles WNW of Punta Lobos, but it has been reported as lying 0.2 mile W of its charted position.

Bahia de Talara (4°34'S., 81°17'W.) is entered between Punta Rocallosa, the NE extremity of Punta Talara, and Punta Macara (4°32'S., 81°17'W.), a small, rocky point backed by sand dunes located about 2.3 miles N. Punta Talara is the W end of a steep, rugged peninsula that forms the SW side of Bahia de Talara.

Talara (4°34'S., 81°17'W.)

World Port Index No. 15190

3.6 Talara, a port situated at the S end of Bahia de Talara, includes the coast from Punta Talara to Punta Arena, 1.5 miles S. The port and adjacent town are important because of oil fields nearby and the large oil refinery.

Winds—Weather.—The prevailing wind, often fresh, varies from SE in the morning to S and SW in the afternoon. The harbor is sheltered except from the N, but there is little protection from strong S land (offshore) winds which may cause considerable swell in the harbor, particularly from June to October. Within the harbor the wind greatly moderates and there are only small swells. The prevailing weather is good. Rain is rare and fog occurs infrequently.

Tides—Currents.—The mean range of tide here is 1.2m, while the spring rise is 1.5m.

The current sets N offshore, but on closing the coast a countercurrent sets S. Approaching the harbor from the N of Punta Rocallosa (4°34'S., 81°17'W.), the current is reported as setting toward the coast. Within the harbor, the current may set N.

Depths—Limitations.—All known dangers in the immediate approach to port are contained within the 10m curve. Banco Oeste (West Bank), less than 9.1m deep, extends about one mile NNW and W from Punta Rocallosa. There are depths of less than 5.5m lying up to 0.2 mile off Punta Talara and Punta Rocallosa. Banco Este (East Bank), about 3.7 to 5.5m deep, extends from Punta Macara to the head of Bahia de Talara and W to the approach channel. Depths on Banco Este and Banco Oeste are variable and the positions of the banks edges are unreliable due to the shifting nature of the bottom. The entrance channel, clear of dangers in the fairway, is at least 183m wide. The fairway has a least depth of 18.5m, but is constricted by the 5.5m depths at the edge of the channel.

The harbor has depths of about 11 to 16m in the middle, which is steep-to and fringed to the shores by a bank of less than 5.5m. There are several mooring buoys in the harbor where vessels can secure while awaiting a berth; however, the harbor is confined and swinging room is limited. Cargo is

lightered from vessels in the harbor, at the anchorages, and at mooring berths. Pier No. 1, which is 235m long and 15m wide at the N end, narrowa to a width of 7.6mat the shore end, with a minimum depth of 5.5m alongside. The maximum permissible draft is 5.8m. This pier is used for general cargo. Pier No. 2 is no longer used.

A new liquid cargo pier, 180m long, is located N of Pier No. 1. Vessels up to 35,000 gross tons can be accommodated on the S side. The ruins of the previous Pier No. 2 lie close to the W.

An offshore tanker berth, consisting of mooring buoys, lies in depths of about 12m 1 mile WSW of Punta Talara. An obstruction lies 0.8 miles W of the berth. A submarine pipeline extends E from the berth to the shore. Tankers with drafts up to 9.8m can be accommodated at the berth. Berthing at the offshore oil terminal is conducted during daylight only.

It is reported that due to the swell and strong undertow, vessels berthing alongside the moles are breasted off about 6m by hawsers to mooring buoys.

Generally, vessels entering the harbor are limited to a length of about 200m, but it was reported that vessels up to 250m have been handled.

Aspect.—Landmarks in the vicinity of Talara are not readily identified if over 8 miles distant, as the terrain appears as an unbroken ridge of sand with mountains in the background. Cerro Tres Picos (4°33'S., 81°17'W.) is a conspicuous peak. A prominent building stands on Punta Macara, and two high and conspicuous tanks stand about 1 mile E of the point. A prominent water tower and a conspicuous television tower stand 0.4 mile and 1.5 miles, respectively, SSW of Punta Rocallosa.

A main light is shown from a prominent tower (black masonry tower, white band) (4°34'S., 81°17'W.), 10m high, standing on Punta Talara. A signal station stands close NE of the light tower. A lighted range indicates the entrance fairway to the harbor.

Pilotage.—Pilotage is compulsory. Pilots will board the ship at anytime of the day or night, unless the berths are occupied, in which case the ship should anchor and the pilot will embark when there is an open berth. Ships should give their ETA to the Port Captain by radio 72 hours, 48 hours and 24 hours prior to arrival. The port can be contacted by VHF channel 14. Pilots generally board vessels about 1 mile NW of Punta Talara and tankers 1.5 miles WNW of the same point.

Regulations.—An IMO-adopted Traffic Separation Scheme is located in the approaches to Talara Port and may best be seen on the chart.

Vessels are not permitted to pass between the offshore oil terminal and the shore.

Anchorage.—Vessels may find good holding ground, in depths of 9 to 18m, between 0.8 to 1 mile NW of Punta Talara. Small vessels may anchor in an area, the limits of which are shown on the chart, about 0.3 mile NNW of Punta Talara. Tankers bound for the offshore berth may anchor about 1.5 miles WNW of Punta Talara, in a depth of 45m, good holding ground.

Anchorages will be assigned by the Harbormaster prior to

Anchorage may be obtained, for tankers or other vessels, in designated anchorage areas, which may best be seen on the chart, as follows:

- 1. Anchorage No. 1 lies 1 mile WNW of Punta Talara. It is used by tankers and has a least depth of 12m.
- 2. Anchorage No. 2 lies 0.5 mile WNW of Punta Talara. It is used by gas tankers and has a least depth of 9m.
- 3. Anchorage No. 3 lies 2.5 miles WSW of Punta Talara. It is a quarantine anchorage. An obstruction lies 0.6 mile E.
- 4. Anchorage No. 4 lies 2 miles N of Punta Talara .It is a quarantine anchorage.
- 5. Anchorage No. 5 lies 0.4 mile N of Punta Talara and is used by other vessels.

A good anchorage is found with Talara Light bearing 100°, distant 1 mile. The depth in the channel averages 31m.

Caution.—Vessels should avoid anchoring near the submarine cables charted NW of the harbor.

Vessels must not navigate between the offshore tanker berth and the shore.

Oil structures are situated within the approaches to the port. Due to the current, vessels should exercise caution while

awaiting a pilot, as steerageway may be lost with the ship setting E of the entrance range and grounding.

Vessels approaching from the S should keep at least 3 miles off Parinas Point, then steer to pass about 1.5 miles W of the Sea Line Buoy, then in toward Talara Point. Care must be taken to avoid the offshore drilling rigs in the Talara area.

Numerous wrecks, best seen on the chart, lie in the approaches to Talara. Mariners are urged to use caution.

3.7 Punta Parinas (4°40'S., 81°20'W.) lies about 5 miles SSW of Punta Arena. The coast between is cliffy in many places, with valleys fronted by dunes between the heights. A shoal bank fronts this stretch of coast. There are several reported dangers, consisting of detached shoals lying inside or close seaward of the 20m curve, and which are best seen on the chart. Vessels should pass at least 3 miles offshore.

Punta Parinas, a conspicuous bluff 50m high, is the W extremity of South America. The point is separated from a range of hills SE of it by low land, so that from N or S the point appears as two islets. Pinnacle rocks and a reef front the point. A main light, with a racon, is shown at the point.

Negritos (Punta Parinas) (4°40'S., 81°19'W.) (World Port Index No. 15180), an oil center, is part of the Talara complex and comes under the Talara Port Captaincy. The town, about 1.5 miles NE of Punta Parinas, is conspicuous from offshore due to the lights of the derricks and other oil installations.

An offshore tanker berth lies in a depth of 12.2m, about 1.5 miles N of Punta Parinas. A submarine pipeline extends from the berth SSE to the shore. Vessels up to 35,000 dwt, with a maximum length of 203m, can be accommodated. Drafts of 10.6m can be handled. Pilots are embarked at Talara.

Anchorage.—Good anchorage may be taken, in depths of 8 to 12m, rock and sand, about 0.8 mile NW of the town.

3.8 Punta Paita (Punta Erada) (5°04'S., 81°09'W.) lies about 25 miles SSE of Punta Parinas. The coast between is low, sandy, and pounded by heavy surf. Generally, this stretch of coast is steep-to, but soundings are insufficient. Mariners are advised to pass at least 2.5 miles clear of the coast. A prominent tank stands near the coast about 4 miles SE of Punta Parinas Light. The Rio Chira is navigable by boats from its

mouth, located 19 miles SE of Punta Parinas, as far as 7 miles inland. Caleta Colan, about 7 miles SE of the Rio Chira, affords anchorage, in 10 to 12m, sand, about 0.3 mile offshore. The town is a resort and has a conspicuous church with a belfry. Caleta Colan is used by fishing craft, but local knowledge is required.

Bahia de Paita (5°02'S., 81°06'W.) is a large, open bight between Punta Nez, located 2 miles S of the Rio Chira, and Punta Erada, about 9 miles SSW. The latter point terminates in a dark bluff. Steep-to underwater rocks lie at least 183m off the point.

A Traffic Separation Scheme has been established in the approaches to Bahia de Paita; Rule 9 of the 72 COLREGS applies. Details are best seen on the chart. The Inshore Traffic Zones lie between the coast and the scheme and are used by local vessels.

Calata Tierra Colorada (5°04'S., 81°09'W.) lies between Punta Erada and Punta Interior, 1.8 miles E. The bay is backed by an uneven and broken plateau, distinguished by red patches on the surface from which it derives its name. There are some prominent tanks and buildings, including a fish processing plant and a whaling factory, at the head of the bight.

At night, care is necessary to avoid confusing the lights of the whaling factory and those of Puerto de Paita.

Two small piers extend from the shore and two mooring buoys are situated in the cove. A lighter, used by fishing craft, is moored in the cove and a submarine pipeline extends from the lighter to the shore. A small pier extends from a point on the E side of the cove, about 0.4 mile SW of Punta Interior.

Anchorage can be taken, in depths of 16 to 20m, at the entrance to the bay and about 0.5 mile N of the fish meal plant. Depths decrease irregularly between the anchorage and the head of the bay.

Paita (5°05'S., 81°07'W.)

World Port Index No. 15170

3.9 The port and town of Paita occupy the head of an open bight indenting the coast between Punta Interior and Caleta Colan, about 5.8 miles NE.

Bahia de Paita is entered through a locally established Traffic Separation Scheme (TSS) as seen on the chart. The pier is approached on 150° as led by leading lights.

Winds—Weather.—Paita is the best of this type of open port on the coast. It is well-sheltered from the prevailing winds and there is no swell, so cargo can be worked without interruption. The weather is always hot; very little, if any, rainfall occurs and there is only an exceptional storm from the N quadrant. Fog does not occur.

The port is sheltered from the prevailing SE winds by the high ground, but heavy swells have been reported.

Tides—Currents.—The near range of tide is 1.2m, while the spring range is 1.5m. Tides here are affected by the winds, and may rise as much as 3.6m.

Depths—Limitations.—The principal pier in the port extends 475m NW from the shore E of the town and has 4 berths. It is reported that the pier has depths of 6.1 to 9.7m alongside. A maneuvering area, marked by buoys, is situated in the vicinity of the head of the pier.

It is reported that a tanker berth, consisting of mooring buoys connected to the shore by submarine pipeline, lies close E of the pier.

Vessels of up to 200m in length and 9.4m draft have been accommodated in the port. An underkeel clearance of 1m is recommended.

Aspect.—The town, built on a slope and foot of a hill, is scarcely visible as the houses have identical colors with the cliffs behind them. Except at the town, sand cliffs rise abruptly from the shores of the bight.

A prominent cathedral and custom house building stand in the town. A prominent radio mast stands about 0.4 mile SSW of the root of the pier. A fish processing plant, with a conspicuous tower, stands about 1 mile WNW of the pier.

A main light is shown from a tower standing close W of the fish plant. Range lights are shown from metal framework towers with daymarks, situated at the head and within the root of the main pier. The range leads through the approach and to the pier.

Pilotage.—Pilotage is compulsory. Pilots board NW of the pier. ETA should be sent at least 24 hours in advance. The port can be contacted by VHF channels 13, 14, and 16.

Anchorage.—Designated anchorage areas, the limits of which may be seen on the chart, are situated in the bay. Anchorage Area No. 1 is for general cargo vessels, in depths of 18.6m. Anchorage Area No. 2 is for fishing vessels, in depths of 17m. Anchorage Area No. 3 is for general cargo vessels and fishing vessels, in depths of 13m. Anchorage Area No. 4 is for dangerous cargo vessels, in depths of 16m. Anchorage Area No. 5 is for quarantine, in depths of 15m. Anchorage Area No. 6 is for small craft, in depths of 2 to 6m. Anchorage Area No. 7 is for naval vessels, in depths of 17m. The bottom is mud and sand.

Caution.—Depths shoal regularly from the 20m curve to the 10m curve, about 0.3 mile off the town. A shorebank extends 0.3 mile offshore. Vessels are advised not to close the shore in depths less than 12.8m, as depths may shoal abruptly in places.

Vessels should not confuse the lights in Tierra Colorada for those in Paita when approaching port from the S.

Oil structures may be situated in the approaches to the port. Numerous wrecks, best seen on the chart, lie in the approaches and adjacent entrance channel to Paita. Mariners are urged to use caution. Two dangerous wrecks lie just NW of the Northern Whaling Company Pier, 1.1 miles SW of Point Chuy.

3.10 Punta Foca (5°14'S., 81°12'W.) 67m high, lies about 9 miles S of Punta Paita (Punta Erada). The coast between rises abruptly to high cliffs and is apparently steep-to; however, lack of sufficient soundings make it advisable to keep at least 3 miles offshore. Care must be exercised not to mistake Punta Capitala (5°08'S., 81°11'W.), a rocky spur projecting 1 mile offshore, for Punta Foca. Cerro Silla de Paita is a range of three isolated, high hills lying 4.5 miles ENE of Punta Foca. The hills make an excellent landmark, varying in color from bright yellow to black according to the sun's position; however, from the N only they appear as a saddle.

Isla Foca, marked by a light, lies 0.5 mile NW of the point. The passage is foul and rocks fringe the islet for about 0.5

mile. A dangerous below-water rock lies 1.2 miles NW of the N end of Isla Foca.

Anchorage can be taken, in a depth of 11m, about 0.2 mile off the NE end of the islet.

Caution.—A submarine exercise area is situated about 48 miles WSW of Isla Foca.

3.11 Bahia de Sechura (5°40'S., 81°00'W.) occupies a bight that recedes about 15 miles E between Punta Foca and Punta Aguja, about 36 miles SSE. The N shore of the bay is high and cliffy; whereas, the E and S shores are low and backed by sandhills. The terrain inland is a low coastal plain for miles. Depths are ample for ships in the bay and approaches. A shoal of 6m lies on the W edge of a shorebank extending about 6 miles off the SE side of the bay. Soundings are lacking in the S of the bay.

Tides—Currents.—The current generally runs out of Bahia de Sechura. Off Isla Foca, the current sets NW, but vessels bound S into the bay have experienced a slight current setting S. Between Isla Foca and Punta Paita (Punta Erada) the current sets N, but it is hardly felt N of Punta Paita. Off Punta Falsa, when the current is setting strongly NW in the offing, a current setting S has been experienced close inshore and in Bahia de Sechura. Near Punta Falsa, a strong S or SW set is frequent.

The **Rio Piura** (5°34'S., 80°52'W.) empties into Bahia de Sechura about 29 miles SE of Punta Foca. The town of Sechura, about 4 miles upriver, can be reached by boat. The church in town has two high, prominent steeples and is a good landmark above the sandhills. One of the steeples has a considerable inclination N which, at a distance, gives it more the appearance of a tree than a stone building.

Anchorage can be taken, in depths of 9.1 to 21.9m, sand, about 1 mile off the mouth of the Rio Piura. The anchorage is exposed to wind and swell, but the holding ground is good. With local knowledge, anchorage can be taken 1.5 to 2 miles off the shore of Caleta Chullillache, 1.5 miles S of the Rio Piura, where the depths are 9.1 to 16.5m.

Matacaballo (5°39'S., 80°51'W.) and La Salina (5°50'S., 80°57'W.) are two, small shipping places along the SE side of the bay which should be approached with local knowledge as depths are uncertain. Anchorage can be taken, in 9.1 to 12.8m, seaward of a shorebank which extends about 3 miles off La Salina.

3.12 Puerto Bayovar (5°50'S., 81°03'W.) (World Port Index No. 15140) is a roadstead in the S end of Bahia de Sechura off Punta Lagunas, which is located about 2.3 miles SE of Punta Aguja. Punta Bayovar and the small village of Bayovar lie about 1.3 miles SSE of low, sandy Punta Lagunas.

Puerto Bayovar is a large tanker port. Crude oil is loaded into VLCC's for international shipment and coastal vessels for domestic use. This marine terminal is used by Petroleos del Peru, serving the oil fields of the Peruvian Amazon region.

Winds—Weather.—The port is sheltered from the prevailing winds. Land and sea breezes blow regularly. The sea breeze is moderate from between W and NW and lasts from 1000 or 1100 to 1400 or 1500. It then shifts to the S or SE and freshens. The land breeze starts about 2100 and continues for about 12 hours. Protection from the sea and swell is afforded by Punta Aguja.

Tides—Currents.—The mean tidal rise at Pueto Bayovar is 1m, while the spring tide rises 1.3m. A strong set towards the main berth has been reported and should be guarded against.

Aspect.—A lighthouse, painted in black and white bands, stands on a hill behind the town and is prominent. Radio masts lie about 0.3 mile S of the light, and exhibit aircraft warning lights. Range lights, shown from two white towers when aligned 235°, lead into port. The lower range light is equipped with a racon.

Depths—Limitations.—Bayovar Oil Terminal (5°47'S., 81°03'W.), at the end of a Trans-Andean pipeline, consists of a T-head pier oriented due N/S, 118m offshore (6m wide viaduct), with a loading platform 25 by 25m, as part of a berthing front 150m long. It has four breasting dolphins and buffer fenders, designed for vessels up to 250,000 dwt in 27m LW (tide about 2.5m). To the E and W, connected by metallic gangways, are two sets of mooring dolphins, staggered so that the inner pair take spring lines and the outer pair mooring lines. The overall length of the installation is 450m. The T-head pier will accommodate tankers of 250,000 dwt, with a maximum length of 400m and a maximum draft of 21.9m.

A small cargo wharf is situated at the land end of the viaduct in order to unload stores and supplies for the terminal; the depth is 10m.

Pilotage.—Pilotage is compulsory for all vessels berthing at the oil terminal, and for the anchorage if it is the Master's first trip to this terminal. Vessels are met about 2.5 miles NE of the terminal.

Vessels should send their ETA and request for pilotage to the local authorities at least 24 hours in advance of arrival. The pilot should be contacted via VHF channel 13, 14, or 16 about 2 hours before arrival.

Berthing is conducted in daylight only, while unberthing takes place around the clock.

Anchorage.—Anchorage is available, in a depth of about 30m, with Punta Aguja 3.5 miles distant and bearing 250°.

Punta Aguja (5°49'S., 81°04'W.) is a cliffy headland with a conical hill at its N end. Submerged rocks lie at least 0.5 mile off the headland and vessels should stay at least 1.5 miles offshore when rounding the point. A main light is shown from the point.

There is a cove on the NE side of Punta Nonura, about 5 miles SW of Punta Aguja, which is sheltered and affords anchorage, in depths of 16.5 to 20.1m, about 0.25 mile off the stream that empties through the beach at the head of the cove.

Punta Falsa lies about 9 miles SW of Punta Aguja. The coast between rises abruptly to a tableland.

Punta Falsa to Morro Guanape

3.13 The coast trends generally SE for 208 miles from Punta Falsa to Morro Guanape. Fog is frequent off this coast between December and late April.

Depths off this coast tend to decrease less rapidly than along other portions of the South American coast, but the rate of decrease varies widely. The 100m curve is charted about 5.8 miles off Punta Falsa, while it lies up to 43 miles offshore S of Isla Lobos de Afuera.

The most dangerous area to navigation off this coast is the passage between Isla Lobos de Tierra and the coast, and also the coast S to Pimentel, as strong and variable current sets may be encountered.

The coast between Punta Negra and Punta Eten (6°57'N., 79°52'W.) is low, sandy, and backed by desert that continues inland to the Andes. Near Punta Eten, there are detached mountains about 7 miles inland.

3.14 Off-lying islands.—Isla Lobos de Tierra (6°26'S., 80°51'W.) lies 9 miles offshore. A light is exhibited from a round metal tower with white bands (6°28'S, 80°51'W.), on the summit of the S end of the island. This island, a source of guano, is 5.5 miles long, 2 miles wide, with rugged hills rising abruptly from its shores. The passage between the island and mainland is not recommended because of the irregular bottom and strong currents. Islets, rocks, and foul ground lie off the S end of the island as far as 9.5 miles SSW and SW, where there are depths of 12.8m. A small jetty and some buildings stand in Caleta Juanchuquita on the E side of the island, about 2 miles from the N extremity.

It is reported that the channel between the island and the coast has not been completely surveyed. Therefore, large vessels and small vessels without local knowledge are advised not to use the channel.

Anchorage can be taken, in depths of 11 to 18.3m, sand, about 0.3 to 0.5 mile off the landing and houses in Caleta Juanchuquita. This anchorage is sheltered from the prevailing SW swell.

Islas Lobos de Afuera (6°56'S., 80°43'W.), a small group of barrier islets and rocks, lie about 35 miles off the mainland. The island was reported (1992) to lie 1.4 miles W of its charted position. The entire group of high, rugged, brown, and white-colored islets is less than 3 miles long and steep-to. A channel, about 37m wide and 7.5m deep, separates the two largest islets. There is a settlement at the S islet. Local knowledge is required to approach the group. A shoal, with a least depth of 14.6m, lies about 2 miles WSW of the group.

Currents in the vicinity of both groups of off-lying islets are strong and irregular. Fog usually obscures the islets in early morning. Vessels approaching the islet groups from the S have been set as much as 36 miles W of their course in 24 hours, and at other times as much to the E. After a strong S breeze, a W set may be expected.

Sheltered anchorage can be taken in Puerto Grande, situated on the E side of the NE largest islet. The anchorage area is about 0.3 mile offshore, ina depth of 21.9m, sand. There is a 2.7m rocky patch about 0.2 mile offshore at the S part of the anchorage. Caleta del Horns, on the NW side of the group, lies in the SE part of a bay between the two large islets. The inlet is at least 0.2 mile wide and extends about 0.5 mile SE. Anchorage can be taken anywhere in the inlet, in depths of 10.1 to 29.3m, rock. There are several rocky, detached shoals in the approaches to the inlet. Local knowledge is necessary to enter the inlet and also Bahia Landrou, located between the SW large island and a chain of islets extending SE from the NE principal islet. The best anchorage in Bahia Landrou is near the head of the bay, in depths of 14.6 to 21.9m.

Caution.—The islands have been reported to lie 1.5 miles W of their charted positions.

3.15 Punta Falsa (5°55'S., 81°09'W.) is a bluff-like eminence, 50m high, projecting from the coast. A fog bank frequently covers the lower parts. A steep-to islet lies 1 mile WNW of the point and is difficult to identify. A light is shown from the point.

Punta Negra, from which a light is shown, lies 10 miles S of Punta Falsa.

Cerro Illescas, a massive summit sloping down to the sea, stands E of Punta Falsa. Punta Negra is the S spur extending seaward from Cerro Illescas.

Pimentel (6°50'S., 79°56'W.) (World Port Index No. 15110) is situated about 4 miles SSE of San Jose, a fishing village and summer resort. Pimentel, an open roadstead, is a port of entry. Depths at the entrance is 11 to 13m.

Depths—Limitations.—There is one cargo wharf which is 750m long with a depth alongside of 3.6m. Vessels load and discharge by lighter. There is a pipeline from the shore to a depth of 12.1m. There are three mooring buoys for lighters near the end of the pipeline. The greatest possible draft is 9.1 to 9.7m.

The cargo handled consists mainly of sugar, oil, and general cargo.

Aspect.—The shore of the roadstead is formed of high sand dunes. A conspicuous sandhill, on which stands a beacon, is located 1 mile NNW of a prominent church at the N part of town. A radio mast and towers are conspicuous. A cross atop the church is highly visible from offshore.

An aeronautical radiobeacon is situated about 7 miles NE of the town.

Pilotage.—Pilotage is compulsory. VHF channel 16 is used. Vessels should transmit their ETA at least 3 days prior to arrival to the Port Captain and agent. Vessels arrive and depart at any time.

Anchorage.—Anchorage can be taken, in depths of 10 to 11m, about 1.5 to 2 miles SW of the pier. Vessels should use caution when approaching the port so as to avoid the many lighters and small craft in the vicinity of the anchorage areas, which do not carry proper lights or none at all. An oil transfer anchorage, best seen on the chart, lies SW of the pier.

Caution.—Both seas and swells, which often come up suddenly, interrupt cargo operations at the anchorage.

A detached shoal, with a depth of 5.9m, is reported to lie about 3 miles WSW of San Jose. A dangerous rock, the position of which is doubtful, lies about 3 miles WSW of the pier head.

Punta Eten (6°57'S., 79°53'W.) lies about 8 miles SE of Pimentel. The coast between is low and sandy. Breakers extending about 1 mile offshore can, at times, be heard for several miles. Shorebanks, reported to extend 3 miles offshore, are to be avoided. Santa Rosa, a fishing village and resort, is situated in a cove 3.5 miles SE of Pimentel, near Punta Santa Rosa. Morro Eten is a double-peaked, high hill with a steep cliff facing the sea, less than 0.5 mile within the point. The hill is marked by a light shown from a concrete tower, 18m high, standing on the summit. It is an excellent mark from seaward.

3.16 Puerto Eten (6°56'S., 79°51'W.) (World Port Index No. 15090) consists of an open roadstead, a ruined jetty no longer in service, and an offshore tanker berth. Cargo is lightered to vessels at the anchorage. The depth of water in the harbor is 12.8m.

An offshore tanker berth is situated about 1.3 miles SSE of Punta Eten. A submarine pipeline extends NE from the berth to the shore. The berth lies in a depth of 12m and is equipped with mooring buoys. The local authorities should be contacted for the latest information on depths, dangers, and regulations at this terminal before attempting to berth here. Pilotage is available via the agent. The port monitors VHF channel 16.

Anchorage can be taken, in a depth of 12m, 0.8 mile SW of the pierhead, clay and sand. Anchorage, in 21.9m, about 3 miles SW of the pier, is feasible, but the long swells cause heavy rolling. Even at the inner anchorage the swells that occur from June through October, but particularly in May and June, can make the anchorage very uncomfortable and interrupt lighter operations. Outer anchorage is available 0.8 mile NW or WNW of Punta Eten, in depths of 10 to 11m.

Punta Pacasmayo (7°25'S., 79°35'W.) lies about 33 miles SE of Punta Eten. The coast between is generally low with some cliffs in places. Punta Cherrepe, about 15.5 miles NNW of Punta Pacasmayo, is a highly visible coastal projection having above and below-water rocks, including Roca Antartica, lying up to 1 mile off it. Punta Pacasmayo is fronted by rocks and shoals on which the sea breaks heavily in bad weather. A light is shown from a square tower, 11m high, standing on the point.

3.17 Pacasmayo (7°24'S., 79°35'W.) (World Port Index No. 15080) occupies a bight which recedes 1 mile E on the N side of sandy Punta Pacasmayo. Except for Salaverry, this bight affords the best anchorage on the coast between Laita and Chimbote. It is fairly well-sheltered from the S sea and swell by Punta Pacasmayo, but that low point does not afford protection from the S winds. The latter usually blow hard after noon, particularly in winter. A heavy swell sometimes interrupts port operations, but vessels are not forced to put to sea. August, September, and October are the worst months for these sea conditions. Ashore there is very little humidity due to the prevailing S wind.

Depths decrease regularly from the 10m curve, which lies 2 miles seaward of the shores. Depths of less than 5.5m exist up to 0.5 mile off the pier head and rocky, foul ground of 6.5m lies 0.2 mile farther. There are depths of less than 2.5m up to 0.3 mile W of the pier head.

Depths—Limitations.—There is one pier, recently overhauled, with a depth of 3m that is served by a railway line and used for lighter operations only. On the head of the pier is a fixed red light.

The port handles shipment of minerals, tara powder, and rice, and imports fertilizers, paraffin wax, and general cargo.

Aspect.—The town of Pacasmayo is situated along the shores of the bight NE of the point. Cliffs back the shore N and S of town, which is fronted by a beach. A dark, square building is very conspicuous atop the cliffs on the N side of the point.

Pilotage.—Pilotage is compulsory and may be arranged through the Port Captain's office on VHF channel 16 during working hours.

Anchorage.—The commercial anchorage area lies in a depth of 10m, about 1 mile W of the pier head. The quarantine and dangerous cargo area lies in depths of 10m, about 1.5 miles NW of the pier head.

Good anchorage can be taken, in 5.4m, with the pier head bearing 096° and the lighthouse 170°, just outside the lighterage anchorage. There is a 0.5 knot NW current.

Punta Malabrigo (7°42'S., 79°28'W.), a high islet lying close off a promontory, is located about 19 miles SSE of Punta Pacasmayo. The coast between is low, with sandy beaches backed by cliffs. Punta Arcana, 7 miles SSE of Punta Pacasmayo, with a village on its N side, is low and fronted for about 0.5 mile by rocks on which the sea breaks. Cerro Puemape, 259m high with sharp peaks and steep sides, is a prominent landmark rising 1 mile NE of Punta Arcana. Cerro Malabrigo, 248m high and marked by a cairn, rises 1 mile ESE of Punta Malabrigo and appears as an island from seaward. A rock, awash, can be found 0.2 mile N of Punta Malabrigo.

3.18 Puerto Malabrigo (Puerto Chicama) (7°42'S., 79°27'W.) (World Port Index No. 15070) is a privately-owned small port occupying a bight that recedes 2 miles E on the N side of Punta Malabrigo. Cargo, mainly fishmeal, is lightered for export.

Depths decrease gradually from the 10m curve, about 2 miles off the town. Roca Reindeer and Roca Garcia, with depths of 3.9m and 2.1m, respectively, lie about 0.8 mile and 0.2 mile WNW of the pier head in port. An area of shellfish cultivation extends up to about 0.5 mile NE of Punta Malabrigo. A 4.5m rocky patch lies close ESE of Roca Reindeer, also a 6.5m rocky patch, lies 0.8 mile NNW of the pier head.

Berths at an 823m long pier are confined to the N side, which can be used only by lighters, due to the heavy swell and N current, which make the S side unsafe.

Pilotage is not needed and pilots may not be available.

Submarine pipelines lying N of the pier connect mooring dolphins, used by fishing craft, to the fish processing plants ashore.

Anchorage.—A commercial and waiting area, shown on the chart, lies in a depth of 10m about 1.5 miles NW of the pier head. A quarantine and dangerous cargo area, shown on the chart, lies about 2 miles W of the pier head, in a depth of 11m. A depth of 7.6m lies close N of the commercial anchorage area.

Caution.—At night, vessels should not pass inshore of Roca Reindeer, as lighters, without lights, are moored in the vicinity.

Fresh breezes occur in port from noon to sunset and are more prevalent during June, July, and August. Strong squalls and swells accompany the winds.

Numerous wrecks lie in the approaches to Puerto Malabrigo and adjacent to the entrance channel. They may best be seen on chart. Mariners are urged to use caution.

3.19 Islas Macabi (7°49'S., 79°29'W.), lying 5 miles SSW of Punta Malabrigo, are two islets separated by a boat passage spanned by a bridge. The islets, which appear as one from a distance, are marked by a light. The N islet is somewhat higher than the other at 31m. The islet on the S side of the passage has

a rounded summit. A lighthouse is also situated on this islet. Both islets are covered by guano, thereby giving them a distinctive yellowish color.

Anchorage can be taken, in depths of 16.5 to 27.4m, sand, off the E side of the N islet. Vessels should navigate with extreme caution near Islas Macabi, at night or in poor visibility, due to the many small craft normally operating in the vicinity.

Punta Huanchaco (8°05'S., 79°06'W.) lies about 30 miles SE of Punta Malabrigo. The coast between is indented by many, unimportant small bights. As far as the Rio Chicama, 16 miles SE of Punta Malabrigo, the coast is low and sandy. The river valley is verdant and conspicuous in contrast to the arid land on either side. Village lights in the valley, visible from offshore, include a lighted sugar mill E of the river mouth. Three conical sandhills, in the form of a triangle, lie 1 mile S of the mouth of the river.

From the Rio Chicama to Huanchaco, the coast is cliffy and interspersed by sandy beaches. Surf, breaking heavily on this coast, can be heard well offshore. Cerro Campana is 993m high, with three peaks, and conical Cerro Huanchaco are prominent peaks rising 5 and 6 miles inland.

Punta Huanchaco is fronted by dangerous rocks and shoals on which the sea breaks. A dangerous rock is reported to lie about 7.5 miles SW of the point. Another rock can be found 2 miles SSE of the point.

Huanchaco, a former small port which is now a resort, is situated on the N side of the point. No port activities are being conducted. The dock, which is 110m long and made of iron, is not being used.

An aeronautical radiobeacon is situated close SE of the point.

Morro Guanape, a very high and prominent hill, stands about 25 miles SSE of Punta Huanchaco. The coast between consists of sandy beaches, backed by low sandhills and cliffs. Heavy surf pounds this coast. Ranges of peaked mountains, about 7 to 9 miles inland, back the coast between Morro Guanape and the port of Salaverry 13 miles NNW. Trujillo, a city and provincial capital, is situated SE of Huanchaco and 1.5 miles inland. Because of its higher altitude, the city lights make a good landmark. Morro Guanape, rising within a low point, appears as an island when seen from S. Depths of 14.8m, 16.4m, and 10.6m lie 0.8 mile SW, 4 miles NW, and about 5 miles N, respectively, of Morro Guanape.

Salaverry (8*14'S., 78*59'W.)

World Port Index No. 15050

3.20 Salaverry, a town and rail terminal, is the shipping port for Trujillo and the surrounding sugar producing area including a mining complex 75 miles inland. The port consists of a basin protected by a main breakwater and an offshore tanker berth close N of the entrance. It is reported that vessels up to 25,000 dwt have been accommodated within the port.

Winds—Weather.—The prevailing winds are SW. Mists and showers occur from April to November, and there are light seasonal rains from December to March. Heavy swells, which may occur from May to October, can interrupt cargo operations for vessels anchored outside the breakwater. These swells may

be accompanied by high seas which usually continue for 3 days, on an average of about 3 days a month, and operations are difficult for another 6 days. May and June are reported to be the worst months for swells. During January through March, a thick fog often occurs in the early morning, but usually it clears by noon. However, the fog may last for several days.

Tides—Currents.—Tides at Salaverry are semi-diurnal, with an average range of 0.8m. The spring range is 1.1m.

Currents set NE at about 0.5 knot. Within the harbor currents tend to set to the S with appreciable value, causing problems for vessels at anchor, or alongside the piers.

Depths—Limitations.—A breakwater, which forms and shelters the harbor, extends about 0.7 mile NW, where an elbow leads SW for 128m. A light is shown at the elbow. In spite of the breakwater, the harbor is exposed to sea and swell, even alongside the piers, and silting throughout the harbor is a constant problem that requires periodic dredging to maintain depths. A bank of shingle fringes the breakwater, extending 0.2 mile N of its head. Shoaling was reported along the inner side of the seaward end of the breakwater. Three breakwaters, extending SW from the E shore, offer some protection from the N and are designed to reduce siltation in the harbor basin. Another breakwater extends SW from the seaward face of the main breakwater near its root.

Depths in the approach channel, which is buoyed and marked by leading lights, and the roadstead are reportedly maintained at a depth of 9m, but siltation is rapid and heavy. An alignment of 101° indicates the access channel to the port and the access to Pier No. 1 and Pier No. 2. Vessels are advised to consult the local authorities for the latest information on depths in the harbor and at berth before attempting to berth here.

It was reported that a heavy swell frequently enters the harbor, forcing vessels working cargo to anchor outside. Breakers are charted off the harbor's NE, E, and SW sides, but the position of the surf line depends on the weather. With much swell, it extends a little beyond the 5.5m edge of the coastal bank.

There are two piers; No. 1 is 225m long and 25m wide, while No. 2 is 230m long and 30m wide. Four berths are available. Berth 1A and Berth 1B have a depth of 8.8m; Berth 2A and Berth 2B a depth of 8.5m. There is a pipeline alongside both sides of Pier 1 to allow tankers to load molasses.

An offshore tanker berth, consisting of four mooring buoys, is situated in depths of about 8m, 0.5 mile N of the main breakwater head. A submarine pipeline extends NE from the berth to the shore and handles inward oil products.

An IMO-adopted Traffic Separation Scheme lies in the approach to Salaverry and can best be seen on the chart.

Aspect.—Morro Carretas rises abruptly from the sea on the S side of the port and is an excellent landmark. The hill stands out well and appears higher than its actual elevation, especially when the mountains inland are obscured by mist. Cerro Chiputur (Garita), standing about 4 miles NE of Morro Carretas, is prominent. A main light is shown from the summit of Morro Carretas.

By day, the buildings and church towers of Trujillo, 8 miles NNW, are prominent.

Range lights mark the approach to the port.

Pilotage.—Pilotage is compulsory. Pilots, on advance notice, will board ships during the daytime at a position about 0.8

mile W of the breakwater head. The authorities board in the harbor or at the piers when the gangway is lowered. Pilotage is not required outbound from the anchorage. The port may be contacted by VHF channel 16.

Anchorage.—Four anchorage areas, best seen on the chart, are classified, as follows:

- 1. No. 1—Tankers.
- 2. No. 2—General cargo vessels.
- 3. No. 3—Vessels carrying dangerous cargo.
- 4. No. 4—Dredges, military vessels, and scientific vessels.

They are located in 10 to 11m of water and the sea bottom consists of sand and mud. The outer anchorages are subject to heavy rollers, especially between May and June.

3.21 Islas de Guanape (8°33'S., 78°57'W.) consists of two small islands about 1.3 miles apart, with adjacent islets and rocks lying about 6 miles SW of Morro Guanape. Isla del Sur (Isla Guanape Sur), the S and highest island, exhibits a light. Isla del Norte (Isla Guanape Norte) is larger but lower and more level. Los Leones Marinos, above and below-water rocks, lie up to 0.8 mile NW of Isla del Norte. Two islets and an above-water rock lie 0.2 and 0.5 mile S and SW, respectively, of Isla del Norte. Islas de Guanape appear whitish in color, and during the season of fog (June-November), allowance must be made for the offshore current. The channel between Islas de Guanape and the mainland is deep and free of dangers in midchannel.

Anchorage can be taken, in 21.9 to 36.6m, close off the N side of Isla del Sur. The best anchorage off Isla del Norte is about 0.3 mile NE of the NE extremity, in about 20.1m, sand and mud. Anchorage can also be taken close off the E side of that island, in 14.6 to 21.9m.

Punta Chao (8°46'S., 78°44'W.) lies about 21.5 miles SE of Morro Guanape. The coast between recedes slightly, is low and sandy, but rises to high ground inland. Cerro Chao, 491m high, is a prominent high hill standing 12.5 miles N of Punta Chao and about 2.5 miles inland. Morro Chao, 348m high, rises about 1.5 miles E of Punta Chao and is conspicuous.

Isla Chao, about 2 miles WSW of Punta Chao, is the largest and S of a group of guano-covered islets and rocks. A group of rocks, on which the sea always breaks, lies 1.5 miles NW of the N islet of the Chao group. The channel between these dangers and the mainland is deep and clear, but not recommended.

Caution.—A dangerous wreck, best seen on chart, lies 6 miles N of Punta Chao close to shore.

A depth of 3.2m was reported (1993) about 2 miles S of Isla Chao. Depths ranging from 8.2 to 25m have been reported throughout the bay N of the Chao group.

3.22 Punta Santa (9°00'S., 78°40'W.) lies about 15 miles SSE of Punta Chao. The coast between is low and sandy, backed by high hills inland.

Several dangers lie up to 5 miles offshore. Roca Rompiente, a dangerous rock over which the sea breaks, lies about 5 miles SSE of Punta Chao and 1.7 miles offshore. Isla de la Viuda, guano-covered and rugged, is located about 3 miles SE of Roca Rompiente. Islas el Corcovado, with prominent cliffs on the W side and gentle slopes on the E, is white with guano and lies

about 4 miles NW of Punta Santa. The sea breaks heavily on a dangerous rock on its N side. Rocks are reported 0.5 mile N of Islas el Corcovado. A dangerous wreck lies 5 miles W of Punta Santa.

The Rio Santa is one of the largest and most rapid rivers on the coast of Peru. It flows through a broad valley bounded on each side by peaked hills and empties into the sea about 1.5 miles NNE of Punta Santa. The river delta is low and shallow.

Punta Santa is a small rocky peninsula rising to about 141m. A rock, 18m high, lies close off it. The peninsula appears detached from offshore and resembles an island due to the low valley behind it.

Bahia Santa, on the NE side of the peninsula, is protected from the S and affords anchorage, in a depth of 9.1m, sand, about 0.5 mile NNE of the NW end of Punta Santa. There is a landing pier on the NE side of Punta Santa.

Isla del Santa (9°01.8'S., 78°40.5'W.) lie centered about 2.3 miles SSW of Punta Santa. The three steep and cliffy islets, lying close together, are separated by a cut 18m wide. A group of high, steep-to rocks lies 0.5 to 0.7 mile W of the S end of the S islet. Anchorage can be taken, in a depth of 14.6m, mud, 0.5 mile E of Isla del Santa.

3.23 Caleta Coishco (9°01'S., 78°38'W.) extends 2.5 miles SE from Punta Santa. Isla Monaque, high and rocky, lies off the NE shore of the bay about 1 mile SE of Punta Santa. The channel between Isla Monaque and the mainland is used only by fishing craft. The channel between Isla Monaque and Isla del Santa is 1.5 miles wide and 13 to 16m deep and is frequently used by vessels headed to the port of Chimbote.

There is a fishing village at the head of the bay protected by a small breakwater. There are four fish flour canning plants in this bay, one of which is found on a rocky outcropping at the W point. It has an old, small, unused pier that is 35m long and 17m wide and another pier that is 96m long and 6.7m wide, and can supply water and fuel to smaller vessels.

There are seven submarine pipelines in the beach area of Coishco Bay with barges at their terminals. Three of the pipelines extend 300 to 400mfrom the beach in an E-SW direction and the other four extend 400 to 600m from the beach in an E-W direction.

Anchorage can be taken in the SE part of the bay and 0.2 mile NW of a bluff where the cliffs end. Depths are about 10m and there is very little swell, but a pinnacle rock, which dries, lies close SW of the anchorage.

There is a wreck 60m from the tip of the pier belonging to the Hayduk, SA Corporation, with visible and dangerous pilings.

Punta Chimbote lies 5.5 miles SSE of Punta Santa. A light is shown from the point. The coast, extending from Caleta Coishco to the point, is backed by Cerros de Chimbote, a range of mountains of which dark and conical Cerro Chimbote, 591m high, near the S end, is the highest.

Caution.—Several reported shoal depths, which are shown on the chart, lie about 74 miles W of Punta Chimbote; the least depth reported was 25.5m.

A submarine exercise area lies about 100 miles WSW of Punta Chimbote.

Puerto de Chimbote (9°05'S., 78°37'W.)

World Port Index No. 15030

3.24 The port and town of Puerto de Chimbote occupies the N part of Bahia de Chimbote (Bahia de Ferrol) which recedes about 3 miles E between Punta Chimbote, the NW entrance point of the bay, and a point about 5.5 miles SSE. Several islands lying in the bay entrance shelter the port, which has alongside berths and anchorages with lightering facilities. Chimbote is the most active fishing port on the Peruvian coast. The sea in this area of the coast is very rich in fish, and as a result, many fishing companies have established export facilities in the port.

Winds—Weather.—Bahia de Chimbote is well-protected from ocean swell, but the N portion of the bay is subject to a daily cycle which continues year-round, almost without interruption. Heavy winds sweep off the surrounding hills generating a sea which may force a vessel to leave its berth. Generally, this occurs after mid-day, and lasts until sunset when the wind decreases or drops. By contrast, the S portion of the bay offers more shelter from S winds, and the sea generated by it.

Tides—Currents.—Tides here are semi-diurnal, with an average range of 0.8m and a spring range of 1m.

Currents within the bay are of little significance, but between Paso del Norte and the piers, the current reaches rates of 0.6 to 1.2 knots at the turn of the tide.

Depths—Limitations.—The harbor is entered via three channels. Paso del Norte, the N channel, is, about 100m wide, with a least depth of 21.9m; it is used by ships with drafts up to 9.1m. A lighted range marks the channel. There is a slight N set across the entrance channel, with a considerable swell at times, which makes steering difficult. It may be necessary, with heavy swells, to enter via the main channel and proceed to an anchorage. Depths decrease within the N entrance to about 8.5m off Pier 1.

Paso del Medio, the main entrance, has depths over 18.5m, shoaling gradually approaching the shores of the bay. East of Isla Blanca there are depths of 6 to 9m in the approaches to the piers. Vessels, with a maximum draft of 7.6m at low water, transit Paso del Medio bound for the piers or an anchorage within the bay. Vessels loading from lighters normally use this entrance.

Channels between Islas de Ferrol are recommended for the use of vessels with local knowledge and small craft.

There are three concrete piers available where vessels have the option to either berth alongside or to anchor, in depths of 9.4 to 12.8m, and be unloaded by lighters. The port handles general cargo and fish meal. The port also has 14 piers dedicated exclusively to the extensive local fishing industry.

General Cargo Pier No. 1 is 185m long and 16m wide, with a depth of 8.5m at the end. Pier No. 2, a small appendage off Pier No. 1, is 54m long and 18m wide. Pier No. 3, also called the mineral pier, is 265m long. There are three berths available for general cargo. Berth 1A and Berth 1B have a depth of 9.1m; Berth 3A has a depth of 9.4m.

Several wrecks lie in the vicinity of the piers and are shown on the chart. A tanker berth, consisting of mooring buoys, is situated off the E side of the bay. Submarine pipelines connect the berth, which is in depths of 8m, to the shore. Tankers up to 25,000 dwt and 183m in length can be handled. Numerous other submerged pipelines lie S of the town and can be best seen on the chart. These pipelines vary in length from 270 to 1,400m, some with mooring buoys at their terminal and others with barges.

Three other submerged pipelines, from 300 to 380m long and best seen on the chart, lie in the N half of Bahia De Chimbote and have one barge at each terminal.

The port has a new floating drydock, length 195m, and can accommodate vessels up to 40,000 dwt.

The shores of Bahia de Chimbote are fronted by shoals with depths of less than 6m, which extend up to 0.4 mile offshore for about 1 mile E of the mineral pier.

Isla Blanca, with a high, steep ridge extending the length of the island, lies with its N end about 0.3 mile S of Punta Chimbote; the W side of the island is colored white.

Arrecife Blanco, lying up to 0.5 mile W of Isla Blanca, consists of a mass of visible shoals over which the sea breaks; the area has a least charted depth of 4.3m. A dangerous wreck is located on the W side of the shoal.

Islote Roca Blanca, the N and higher of two steep, white rocks, lies on the S side of the N entrance channel between Punta Chimbote and Isla Blanca. Roca Negra, above-water, lies 183m ENE of Punta Chimbote and N of the entrance channel; a rock, with a depth of 3m, lies close SE of Roca Negra. Islote Azimut, high and rocky, lies off the NE end of Isla Blanca where it is marked E by a lighted buoy.

Islas de Ferrol (9°09'S., 78°37'W.) are steep-sided, appear white, and form a chain of islets and rocks lying up to 1.8 miles NNW of the S entrance point of the bay. Isla Ferrol del Norte, the outermost islet, lies about 1.5 miles S of Isla Blanca, on the S side of the main entrance channel. The islands of the group are quite high; whereas, the shores of the bay they front are backed by a low, bare, sandy plain with mountains farther inland. The Cerro Peninsula, about 1.3 miles SE of the SE entrance point, is the highest summit of the hilly peninsula that separates Bahia de Chimbote and Bahia de Samanco.

A wreck, with a depth of 10m, lies in the center of the main entrance channel, about 0.9 mile SE of the S extremity of Isla Blanca.

Dangerous wrecks are charted about 1.3 miles ESE and 1 mile SE of the drydock.

Aspect.—Several tanks, hotels, and radio and television masts, which stand on the shores of the bay, are conspicuous. A light is shown on the N side of Islote Roca Blanca. A main light is shown from a tower, 7m high, standing near the S end of Isla Blanca. A light is shown from the N extremity of Isla Ferrol del Norte.

Paso del Norte is marked by a lighted range.

Pilotage.—Pilotage is compulsory. The pilot boards in the anchorage area E of Isla Blanca.

Vessels should radio their ETA to the Captain of the Port at least 24 hours in advance of arrival.

Pilotage may be requested on arrival from the Port Captain's office via VHF channel 16, between 0545 and 1700, or at any other time with prior notice. The pilot boards in the anchorage area.

Regulations.—In the approach to Bahia de Chimbote in the passage through Paso del Medio, an IMO-approved traffic separation scheme is established; Rule 10 of COLREGS 72 applies.

Anchorage.—Four separate anchorages have been established and are best seen on the chart. Anchorage is available for vessels with a draft no greater than 11m within an area E and SE of Isla Blanca Light. Smaller vessels may find anchorage in another charted area situated about 1 mile SE of Pier No. 1, in charted depths of 4.5 to 8.8m.

There is good holding ground anywhere in the bay, but it may be said that the nearer the vessel can be to Isla Blanca, the better; here the bottom is softer, and there is more shelter in the event of a S swell.

3.25 Bahia de Samanco (9°14'S., 78°32'W.) is separated from Bahia de Chimbote by a T-shaped peninsula that projects from the coast. The outer part of the peninsular is steep, hilly, and rock-fringed; but the inner part is a low, sandy isthmus. The highest summit is the Cerro Peninsula, previously described in paragraph 3.24. Isla Lobo (Isla Redonda), lies close off the S end of the peninsular and forms the N entrance point of the bay. Punta Samanco (Punta Filomena), about 2.3 miles SE of Isla Lobo, is the S entrance point. It is a steep, rockfringed bluff with above and below-water rocks lying up to 0.2 mile NW of it. The bay recedes about 5 miles NNE from the entrance. Within the bay the depths gradually decrease to 10m and less about 1 mile offshore. The only known dangers in the bay are in the vicinity of Isla el Grillo (Isla Pajaros), lying 0.8 mile off the NE bluff of the bay, and off which are sunken rocks extending about 0.2 mile, on which the sea breaks; another submerged rock lies 1.2 miles S of the island. A dangerous submerged rock lies 1.3 miles NE of Isla Lobo. Landmarks in identifying the bay from the offing include Monte Campana, a bell-shaped mountain rising 1.3 miles ENE of Punta Samanco. Cerro Samanco, conical and high, is conspicuous about 2.5 miles NE of Monte Campana.

Nuevo Samanco (9°14'S., 78°30'W.) (World Port Index No. 15020) is on the E shore of the bay, about 4 miles NE of Punta Samanco (Filomena). Formally a lighterage port for sugar, and one of the best open ports on the coast despite a constant swell, it now lies idle, but there is the intention of re-opening it as an industrial fishing port to ease the situation at Chimbote, where growth of the fishing business has been erratic and uncontrolled.

The old pier, 369m long, ends in a depth of 8.5m, though it is subject to silting.

There is a prominent chimney near the root of the pier. At Samanco, situated 1.8 miles ENE of Punta Samanco, a pier extends 350m offshore with depths of about 3 to 4m at its head. There are several mooring buoys near the pier. At Samanco, there are fish processing plants, oil tanks, a water tower, and a prominent chimney.

Anchorage can be taken, in a depth of 13m, sand, about 0.5 mile W of the pier head at Nuevo Samanco. There is an anchorage 0.5 mile off Caleta Guambacho, on the SE side of the bay, in depths of 7.3 to 11m, mud.

The coast between Punta Samanco and Bahia de Casma, about 12 miles SSE, is bold and rocky. Bahia de los Chinos (9°21'S., 78°26'W.), midway between, is unexamined. Isla Los

Chimu (Isla Viuda) lies off the N entrance point and Isla Tortuga, shaped like a turtle, lies off the S one. Cerro Tortuga, close E of the S entrance point, rises to an elevation of 410m and is prominent. A rock, with a depth of 7.5m, lies mid-way between Isla Los Chimus and Isla Tortuga. Caleta Los Chimus, with a sandy beach on which the sea always breaks, is entered close S of Punta Samanco.

Bahia de Casma (9°27'S., 78°23'W.) is entered between Cachola Sur and Cachola Norte, about 1.8 miles NW. The bay is identified by a sandy beach at the head of the bay, and backed by sandhills which contrast with the dark rocks forming the headlands at the bay entrance. Above and below-water rocks lie off the entrance points of the bay. The former small port within the bay is closed. A light is shown close S of the S entrance point.

Anchorage, in depths of 7 to 10m, sand, may be taken about 0.1 mile off the SE shore of the bay, but it is advisable to moor as close as possible in the lee of the high land, due to squalls which blow from midday to sunset.

Caleta Colina Redonda (9°38'S., 78°22'W.) lies about 11 miles SSE of Bahia de Casma. The coast between is rocky and is backed by a range of steep hills that run parallel to it.

Cerro Mongon, a high sharp peak, rises to an elevation of 1,121m about 4 miles E of Punta Colina Redonda; from the S, this prominent feature appears as a long hill with a peak at each end. Morro Calvario is a steep bluff at the N end of the above range and forms the S headland of Bahia de Casma. Several dangerous rocks and islets lie off the coast between Bahia de Casma and Caleta Colina Redonda and may be seen on the chart.

Punta Cabeza de Lagarto (10°07'S., 78°11'W.) lies about 31 miles SSE of Punta Colina Redonda. Groups of small islets and above-water rocks are located at several places along the coast and extend up to 1 mile seaward from the shore. The point ends in a steep cliff, 88m high. A main light is shown from a tower, 18m high with a wind generator on top, standing on the point.

Caution.—A dangerous wreck lies WSW of the point.

3.26 Bahia de Huarmey (10°06'S., 78°10'W.) (World Port Index No. 15000) is a small lighterage port used for the export of fishmeal. This very small bay is entered between Punta Lobitos, 0.5 mile NNE of Punta Cabeza de Lagarto, and Punta Boqueron, about 2 miles NNE. Punta Boqueron is sharppeaked with a white patch on it. The S shore of the bay is fronted by rocks. The E and SE shores are fronted by a 5.5m shorebank up to 0.2 mile off. Islote Corcovado, rocky, high, and sheer, lies in the middle of the bay and is radar-prominent. Islote Manache, a low white islet located close off the NW side of Punta Boqueron, is also radar-prominent.

A small pier, at which lighters are loaded with bagged fishmeal, is situated about 0.8 mile ENE of Punta Lobitos. A brightly lighted fishmeal factory is situated close to the pier, and a prominent church is situated in the town.

Pilotage.—Pilots are not available and local knowledge is required to enter the port. An ETA should be sent to the Port Captain at least 24 hours in advance. The port can be contacted by VHF channel 16.

Anchorage.—Vessels anchor approximately 275m SE of Isla Corcovado, in the middle of the bay, where the depth

ranges from 12.8 to 14.5m. Loading is from four 60-ton lighters.

There is a heavy swell within the bay from June through August. Small craft can anchor 0.2 mile N of the lighted tower at the head of the pier.

3.27 The coast between Punta Cabeza de Lagarto and Promontorio Salinas, about 75 miles SSE, is fairly regular, with many small coves and fringing rocks and islets lying within 1 mile of the shore. Punta Las Zorras (10°17'S., 78°05'W.), steep and dark with white patches, is radar-prominent.

Punta Colorado Grande (10°30'S., 77°57'W.) is a high, salient feature fringed with above-water rocks. Cerro Baco, 1477m high, stands about 8 miles NE of the point and is prominent.

Bahia Bermejo (10°33'S., 77°55'W.), protected on the S by Punta Bermejo, a peninsula connected to the mainland by a low isthmus, is formed by Cerro Mansueto at its N entrance. In the middle of the S shore there are red cliffs divided by a conspicuous white mound. There are depths of less than 9.1m in the bay. Anchorage, exposed to the W swell, can be take,n in 10.1m, sand, with Punta Bermejo bearing 190°, 0.5 mile distant, and the white mound bearing 129°.

Paramonga (10°40'S., 77°50'W.), a small oil port, is situated about 2.5 miles S of Cerro Horca, a guano-covered, isolated hill. Paramonga can be identified by the two prominent chimneys of a power station. A submarine oil pipeline, about 1,219m long, is marked at its seaward end by three mooring buoys lying 0.8 mile offshore. Vessels moor at the buoys, with both anchors down and lines to buoys on each quarter and on the port bow. Depths of 8m exist at the berth and vessels of up to 23,000 dwt, with lengths of 198m, can be handled. Vessels must first proceed to Puerto de Supe in order to obtain clearance. It is reported that a mooring pilot boards, but local knowledge is required. Paramonga may be contacted on VHF channel 16. The depth at the anchorage is 7.9m.

Directions.—The alignment (085°) of the power station chimneys and the oil storage tanks leads to a position where an alteration of course to 125° brings the vessel into the berth, with the head buoy on the port bow.

The Rio Barranca, about 5 miles SE of Paramonga, is the source of a spit which extends several miles offshore and should be given a wide berth. Punta Barranca (10°48'S., 77°45'W.) is formed of high cliffs, rock-fringed, and has offlying rocks marked by breakers lying at least 0.4 mile offshore and 0.8 mile N of the point. The town of Barranca is situated on the cliffs inshore of the rocks. It is reported that a conspicuous, lighted radio mast stands near the town. The coast in the vicinity of Punta Barranca is pounded by heavy surf.

Punta Thomas (10°48'S., 77°45'W.), about 2 miles SSE of Punta Barranca, is a large headland and an excellent landmark. A main light is shown from the point. Bahia de Supe is entered between the two points.

3.28 Puerto Supe (10°49'S., 77°44'W.) (World Port Index No. 14990) is the lighterage and fishing port of Supe and is situated at the SE side of Bahia Supe. Vessels anchor in the bay and work cargo from lighters. Supe is an unprotected lighter-

age port. It is subject to heavy swell, mainly between June and August.

There is one pier, with a depth alongside of 6.8m. Supe was formally a sugar port; the only export now is fishmeal. A prominent radio mast stands about 1.5 miles N of the pier. There are several underwater oil pipelines extend offshore from a position onshore about 0.2 mile NE of the pier. Mooring buoys mark a tanker berth, in depths of about 14m, at the outer end of the pipeline.

Pilotage is compulsory. The ETA should be sent 24 hours in advance. The port can be contacted by VHF channel 16. The pilot boards 1 mile offshore.

There are four charted anchorage areas as best seen on the chart. Anchorage can also be taken, in 7.5 to 9.1m, about 0.3 mile from the head of the bay. Larger vessels can anchor farther offshore, in depths of 11 to 12.8m, but are exposed to a heavy swell.

Caution.—The bay is subject to heavy swells, especially between June and September.

An explosives dumping area is charted about 0.9 mile NW of Punta Thomas, and should be avoided by all vessels navigating the area.

3.29 The coast between Punta Thomas and Bahia de Huacho trends SSE past Punta Atahuaca (10°54'S., 77°42'W.), which has two mounds that resemble forts and are white in color on their S sides. The coast itself is sandy and fairly high.

Punta Vegueta (11°01'S., 77°40'W.) lies about 13 miles SSE of Punta Thomas. Isla San Martin (Isla Don Martin), located 0.8 mile WSW of the point, is 80m high, white with guano and prominent from seaward.

There is a fishing village at the head of a cove N of, and within, Punta Vegueta. Small craft in the cove can anchor, in depths of 14.6m.

Punta Carquin lies about 5 miles SSE of Punta Vegueta. The bay close N of the point is not used by shipping due to constant surf. A steep, flat-topped islet, Islote Carquin, lies about 1 mile offshore and opposite a sheer hill that rises close to the coast about 1.5 miles N of the point.

Punta Huacho (11°07'S., 77°37'W.) is a reddish rocky headland, 60m high, lying 7 miles SSE of Punta Vegueta. A main light is shown from the point.

Bahia Huacho is entered between Punta Huacho and Punta Carquin. A reef, with rocks above-water, extends 183m N from Punta Huacho. Depths of 16.5m in the bay entrance decrease gradually within the bay. The E shore of the bay is fronted by a narrow, sandy beach backed by cliffs.

3.30 Puerto de Huacho (11°07'S., 77°37'W.) (World Port Index No. 14980) is a lighterage port situated in the SE corner of the bay. The town of Huacho is situated on level terrain atop the cliffs, about 0.8 mile NE of Punta Huacho. Lights in town, including brightly lighted fishmeal and fish processing plants, are visible from offshore, as is a radio tower topped by red lights. The open roadstead is subject to heavy swells, especially during the winter months when sea and swell may close the port temporarily. A concrete pier, 220m long and used by lighters, is situated at the head of the cove formed by Punta Huacho at the S end of the bay. The pier has an alongside depth reported to be 3.3m.

There are two tanker terminals, with 18 and 24m depths, for 30,000 ton tankers.

The ro-ro facility has been reported closed (1994).

Pilots are not available. An ETA should be sent at least 24 hours in advance. The port can be contacted by VHF channel 16 during working hours.

Anchorage for general cargo vessels can be taken, in depths of 11 to 12.8m, sand, with the pier head bearing 145°. The holding ground is good, but a W and SW swell is troublesome. Quarantine anchorage is located at 1 mile NW and larger vessel anchorage is 0.5 mile NNW of Punta Huacha. These anchorage areas are shown on the chart.

Caution.—A dangerous wreck is situated about 4 miles W of Punta Huacho. Another wreck lies just N of the same point. Both are best seen on the chart.

3.31 Bahia Salinas (11°12′S., 77°36′W.) is entered between Punta Huacho and Punta Bajas (11°14′S., 77°38′W.), about 6 miles SSW. The shores of the bay consist of sandy beaches, backed by hills. There are two coves on the S shore of the bay. Bahia Grande, the W cove, affords anchorage, in depths of 11 to 12.8m, sand and mud, about 0.2 mile offshore. The best anchorage, sheltered from the swell, is in Bahia Chica, the E cove, in depths of 5.5 to 7.3m, sand, about 0.3 mile from the W entrance point and 2.5 miles ENE of Punta Bajas. Local knowledge is required to use these anchorages.

Promontorio Salinas (11°16′S., 77°37′W.) is about 5 miles wide between Punta Bayas, the NW extremity, and Punta Lachay, the SW extremity of the promontory. Punta Salinas is 1 mile N of Punta Lachay and has a flat-topped islet lying off it. Punta Bayas, from which a light is shown, is low, dark, and has above-water rocks extending 0.5 mile NW. There are submerged rocks lying at least 0.3 mile off Punta Lackay. Cerro Salinas, pyramid-shaped and conspicuous, rises from a sandy plain about 2 miles SE of Punta Bayas. There are two coves between Punta Salinas and Punta Bayas. The S of the two coves affords anchorage for small vessels, in a depth of 14.6m, mud, about 0.3 mile offshore, exposed to surf and swell.

A measured distance of 2 nautical miles has been established on the W coast of Promontorio Salinas. The ends and middle of the distance are each marked by a pair of beacons situated close W and 2 miles S of Punta Bayas light structure. The front beacon of each pair has a white diamond topmark and the rear beacon a white rectangle. The running course is 000°-180°. The run area is surrounded with a restricted area designation.

Roca Misteriosa, with a depth of 5.5m and on which the sea breaks at times, lies about 1 mile offshore and almost mid-way between Punta Salinas and Punta Bayas.

An aeronautical radiobeacon is situated on Promontorio Salinas, about 4 miles ENE of Punta Lachay.

Caution.—A restricted area, best seen on the chart, is situated off the W shore of Promontorio Salinas. Between Punta Lachay and Punta Bajas, vessels should pass at least 9 miles W of the shore.

3.32 Grupo de Huaura (11°24'S., 77°45'W.), a chain of islets, extends about 14 miles SW from Punta Lachay. Islote Pelado (11°27'S., 77°50'W.), the outermost islet, is rounded, precipitous, and free of guano. A light is shown from the islet.

Isla Mazorca, which also shows a light and has a radiobeacon situated at the light tower, lies about 6.5 miles NE of Islote Pelado. The passage between the two islets is free of dangers. Islote Tambillo, the innermost islet, lies about 2.5 miles SW of Punta Lachay. Several islets and rocks above-water lie between this islet and Isla Mazorca. The passage between Islote Tambillo and Punta Lachay is navigable.

3.33 The coast, known as Playa Grande, between Punta Lachay and Punta Chancay, about 27 miles SE, is cliffy, backed by high sand hills, and fronted by a narrow shingle beach. Heavy surf prevents a landing. Cerro Pelado (Monte Mollersh), about 17 miles E of Punta Lachay, is conspicuous from offshore.

Bahia de Chancay (11°35'S., 77°17'W.) is entered between Punta Chancay and Punta Caulan, 1.3 miles NE. Punta Chancay, a bluff with three hills on it, protects the S side of Bahia de Chancay. A prominent fishmeal factory is situated about 1 mile NE of Punta Chancay. Conspicuous crosses stand on a hill and near shore. A church is prominent. A main light is shown from Punta Chancay and prominent radio masts stand 1.3 miles NNE and 0.9 mile ENE of the light tower. Stranded fishing boats and wrecks lie E and NE of Punta Chancay. The bay recedes about 0.3 mile and has depths of 9.1 to 14.6m in the outer part. Swell in the bay is very uncomfortable in April and May, also in September and October.

3.34 Chancay (Puerto de Chancay) (11°35'S., 77°17'W.) (World Port Index No. 14970), primarily a fishing port situated on the S side of Bahia de Chancay, consists of two small coves separated by a dark-colored point. Above and below-water rocks front the coves. The town of Chancay stands on a plateau about 2 miles NNE of Punta Chancay.

The principal pier, from which a light is shown, is used for the unloading of fish, and for also the transfer of general cargo and fishmeal by lighters to ships at anchor. The pier is about 210m long, with a depth of about 5 to 6m alongside its head and berths, which are used by small vessels up to 500 tons.

Pilotage is not compulsory; the port can be contacted by VHF channel 16.

Anchorage can be taken, in depths of between 9m to 14.6m, sand, in the center of the bay and 0.5 mile N of Punta Chancay. Vessels are unloaded by lighters.

Caution.—Numerous unlighted buoys and moored lighters may be found within 0.5 mile NW of the piers. A wreck, marked by a barrel buoy, lies about 0.5 mile WNW of Punta Caulan.

A prohibited area with a radius of 200m is centered on position 11°34.3'S, 77°17.0'W.

3.35 Punta Mulatas (11°46'S., 77°12'W.) lies 12 miles SSE of Chancay. The coast between is fringed with rocks and reefs in places, but there are depths over 20m about 1 mile offshore. Much of the coast is composed of very high sand dunes rising almost vertically from the sea and leaving no beach. Monte Stokes, about 11.5 miles E of Punta Chancay, is prominent. Two prominent television masts and a light stand on a hill about 0.5 mile SE of Punta Mulatas.

Punta Salitral (11°47'S., 77°12'W.) lies about 1 mile S of Punta Mulatas. Isla Referendo and Isla Huaquillo, from which a light is shown, lie in the entrance to a bay close N of the point.

Grupo de Pescadores (11°48'S., 77°16'W.), a group of guano-covered islands, islets, and rocks, extends about 4.3 miles W of Punta Mulatas (11°46'S., 77°12'W.) and lies in the S approach to Bahia de Ancon. Isla Grande (11°36'S., 77°16'W.), the W and largest island of the group, lies about 3.8 miles W of Punta Mulatas and is radar-prominent. Two small islets, Isla Gallinazos and Isla Torbao, lie off the NE side of the island. A light is shown from the island, and a radio mast stands about 0.2 mile NNE of the light. Islote La Viuda lies 0.5 mile W of Punta Salitral. Passage between the island and the point requires local knowledge. The island is conspicuous and a good mark approaching Bahia de Ancon from the S. Islas Hormigas de Tierra (11°45'S., 77°17'W.) are two steep-to, above-water rocks lying about 1 mile NNW of the N end of Isla Grande. Isla El Solitario and four other islets within 0.8 mile, lie about 1 mile SW of Punta Salitral. Isla Huacas, with nearby rocks, lies 1.5 miles SE of Isla Grande. Isla San Pedro lies about 0.5 mile offshore, 1.5 miles SSE of Punta Salitral. Passages between the groups of islets are deep, but above and below-water rocks fringe the islets and local knowledge is necessary.

Hormigas de Afuera (11°58'S., 77°45'W.) comprise a group of steep-to, guano-covered rocks and reefs that lie about 34 miles WSW of Punta Mulatas. A light is shown from a tower, with a radar reflector, situated on the S rock of the group. The light tower is reported radar conspicuous at 15 miles. Depths of 14.5 and 16.5m (soundings doubtful) are charted 14.8 and 13.3 miles SSE, respectively, of the islets. The N rock, awash, lies 1 mile NNW of the S rock. Reefs extend N from the N rock and breakers extend SE from the S rock. The current sets NW, with a velocity of about 1 knot, in the vicinity of the rocks. Farther offshore, the Peru Current may attain a velocity of 2 knots.

Caution.—Caution is advised when transiting through the restricted areas, the limits of which are shown on the chart, situated NW and SE of Hormigas de Afuera.

3.36 Bahia de Ancon (11°45'S., 77°11'W.) (World Port Index No. 14960) is entered between Punta Mulatas and a high, multi-colored point about 4.3 miles N. Punta Mulatas is fringed by pinnacle rocks marked by breakers. The bay is mainly used as an explosives anchorage. This lighterage port is the obligatory discharge point for IMO-class dangerous cargo destined for Callao. The former regulations on other dangerous cargo in transit have been revoked, and no vessel now has need to return from Callao to reload.

A pier about 107m long extends from shore about 2.3 miles NE of Punta Mulatas. Explosives from vessels at anchor are unloaded from lighters at the pier. The town, which has several small jetties, stands at the S end of the bay and is a fishing port and resort.

Anchorage can be taken, in depths of 9.1 to 12.8m, about 0.3 to 0.5 mile NW of the pierhead. This anchorage is open to NW winds and "bravezas" (June to September). Vessels may also anchor, in 9.1m, off the pier head. The Explosives Anchorage lies 0.8 mile W of the explosives pier.

Caution.—A former jetty, now destroyed, showing iron pilings which are awash at low water, exists in the central part of the bay.

A prohibited area, best seen on the chart, is located near the naval zone N of the port.

3.37 The coast between Punta Mulatas and Puerto del Callao, about 15 miles S, consists of hills and cliffs along the N part and lower, sandy terrain along the S part. Several islets and rocks, colored white, lie close to the coast between Punta Mulatas and Punta Pancha (11°51'S., 77°11'W.). Monton de Trigo, a peaked hill, is conspicuous SE of Punta Pancha.

La Pampilla Oil Terminal (11°56'S., 77°10'W.) is an offshore loading facility with the refinery situated about 6 miles S of Punta Pancha. The lights of the refinery are conspicuous from seaward.

A discharge berth consisting of mooring buoys lies in depths of 18.2m; a submarine pipeline 4,500m long extends from the berth to the shore. The berth can handle vessels up to 50,000 dwt and 335m in length, with drafts up to 15.2m.

A loading berth, consisting of mooring buoys, lies in depths of 12.2m; a submarine pipeline, 1,500m long, extends from the berth to the shore. The berth can handle vessels up to 213m in length, with drafts up to 10.9m.

These mooring berths belong to PETROPERU, one consisting of four buoys and the other five buoys. These berths are positioned so the vessels will be secured on an approximate true bearing of 180°, which makes for the best conditions in order to receive the wind and sea.

A third underwater pipeline belongs to the ENERGAS Company; it is 1,850m long and pushes into the sea on a bearing of 260° until it reaches the 13m isobath; its terminal has 4 mooring buoys and one line buoy.

Pilotage for this terminal is compulsory, and may be had off the berths by prior arrangement, or in Bahia de Callao. Pilots are available 24 hours.. The terminal can be contacted by VHF on numerous channels.

Caution.—Navigation and anchoring are prohibited within 0.5 mile of the berths and pipelines. The area is best seen on the chart.

There are three wharves between the mouths of the Rio Chilln and the Rio Rimac. From N to S they are the Mucensa Wharf, Fertiza Wharf, and the IMSA Wharf.

The Mucensa Wharf, managed by PESCAPERU (Peruvian Fiahing Corporation) is made up of iron pilings and a reinforced concrete platform, 407m long and 10.8m wide, with a height of 4m above mean sea level. It is situated on Fertiza beach and has been in operation since 1963. It is used for unloading anchovy and is equipped with water and oil pipelines. There is a fixed light at its head.

The Fertiza Wharf, managed by Compainia de Fertilizantes Sinteticos SA, is made of iron pilings and a wooden platform, 209m long and 4.3m wide; it stands on Fertiza beach and is not in operation (2001).

The IMSA Wharf, managed by PESCAPERU, is made of reinforced concrete with lightweight iron, 260m long and 3.6m wide. It stands on Acapulco beach. It is not in operation.

Puerto del Callao (12°03'S., 77°09'W.)

World Port Index No. 14950

3.38 Puerto del Callao, formed and sheltered by N and S breakwaters, is the principal harbor of Peru and the port of entry for Lima, the capital. The harbor is entered through Bahia del Callao (12°02'S., 77°10'W.), bound N by Punta Bernal (11°55'S., 77°09'W.) and S by El Cabezo (12°04'S., 77°16'W.), the high, NW extremity of Isla San Lorenzo. Punta Bernal is low and sandy. The coast between this point and Callao N breakwater is a sandy beach, fronted for about 1.5 miles N of the breakwater by a shoal with depths of less than 5.5m, which extends at least 1 mile offshore. Bahia del Callao is partially sheltered by Isla San Lorenzo, the adjacent islets, the promontory of which Punta Punta (12°04'S., 77°10'W.) is the SW end, and the spit extending SW of Punta Punta.

An IMO-adopted Traffic Separation Scheme, best seen on the chart, has been established in the approaches to Callao. The approach to the port is made through Bahia Del Callao after passing around the precautionary zone counterclockwise within the traffic circle, 1 mile in diameter centered in position 12°01.8'S, 77°14.8'W, thereafter following the lead into the harbor on lights in range bearing 099°.

It is reported (2002) that the harbor entrance range is difficult to distinguish and often obscured by large cargo vessels. Fog makes the use of the range problematic.

The entrance channel has charted depths of 10.6m. There are a total of 18 berths for ocean-going vessels, including a petroleum pier.

Winds—Weather

The prevailing S winds are usually light and the sea smooth. Isla San Lorenzo reduces the swell in the harbor, but a constant W swell causes a surf to break on the beaches. The swell does not usually prevent lighters from working alongside ships at the anchorage.

Surf and wind alongside exposed piers and wharves may prevent the discharge of cargo from lighters and interrupt communications between ship and shore. Fog is frequent from December to April. The rainy season occurs be-tween July and September.

Tides—Currents

Tides at Callao are semidiurnal, with a mean range of 0.6m, and a spring range of 0.8m.

The currents off the port set N, but the velocities within the bay are negligible, except with SW swells when the currents set strongly N through Pasaje El Boqueron (12°06'S., 77°11'W.). Tidal currents in the vicinity of the terminal reach rates of 0.8 to 1.3 knots, with the set depending on the tide; a strong surge may be felt within the breakwaters forming the harbor. When there is a freshet in the Rio Rimac (12°02'S., 77°08'W.), the current is strong across Bahia del Callao and tends to silt up the harbor.

Depths—Limitations

Isla San Lorenzo (12°05'S., 77°13'W.), forming the SW part of Bahia del Callao, is high, sandy-colored, and cliffy in places. El Cabezo (Cabo San Lorenzo), the NW end of the island, is radar prominent. A main light is shown from the point. Several steep-to islets lie close off the W and S sides of the island. A wreck is reported about 3.3 miles W of Cabo San Lorenzo. A foul area, marked by breakers and heavy surf, extends about 1 mile off the SE end of Isla San Lorenzo. Isla Callao (Isla Fronton) is located close SE of the SE end of Isla San Lorenzo; it is marked by breakers SE and is the outermost danger within the foul area.

Islas Palominos is a cluster of steep-to rocks lying about 2.3 miles SW of the S end of Isla San Lorenzo. A light is shown from the rocks and they are radar prominent. Roca Iquitos, with a depth of 4.6m, lies a little more than 0.5 mile NE of Islas Palominos; several rocks and islets lie between it and the S end of Isla San Lorenzo. A 16m patch lies about 0.8 mile WSW of the light tower on Islas Palominos.

The NE side of Isla San Lorenzo is fringed in places by rocks and reefs. Two rocks, awash, lie about 0.2 mile offshore, midway between El Cabezo and Punta Galera, 1.5 miles ESE, the latter is a good radar target. A visible wreck lies 0.4 mile E of Punta Galera; another visible wreck lies the same distance NW of the point. Caleta Sanitaria, the site of a Quarantine Station and a small pier, is situated 0.3 mile SE of Punta Galera. A naval training station and small pier lie close SE of Punta Gruta, located 1 mile SE of Punta Galera. Foul ground, with a depth of 9.1m, lies in the approach to the pier. An above-water wreck is charted 0.3 mile SSE of the head of the pier; a dangerous wreck lies about 0.9 mile NE of Punta Gruta.

Banco El Camotal extends SW from Punta Punta. A main light is shown from the roof of a building on the point.

Lomo de Ballena, the drying part of the bank and from which a light is shown, lies about 0.8 mile W of Punta Punta.

Numerous wrecks and obstructions lie within 1 mile of the N breakwater and adjacent coast and may best be seen on the chart.

Pasaje El Boqueron (12°06'S., 77°11'W.) leads N around the E side of Isla Fronton and then NW into Bahia del Callao, between the shorebank that extends off the SE end of Isla San Lorenzo and Banco El Camotal. This bank is separated from Isla San Lorenzo by a fairway about 0.4 mile wide and 6.4 to 18.3m deep. The SW end of the bank is steep-to, unmarked, and subject to frequent change. Strong N currents occur during heavy SW swells. Local knowledge is necessary to transit the passage. A marine cultivation area lies off the SE end of Isla San Lorenz.

Immediately S of the main piers are five additional berths, with a total length of 662m; depths alongside range from 5.5 to 11.6m.

There are no special containers berths. Conventional vessels may discharge or load containers at any berth, except Pier No. 7, the petroleum pier.

Ships load fish oil at berth; cargo is brought alongside by trucks. Ships discharge chemical products at Pier No. 4 and fuel and diesel at Pier No. 7.

The petroleum pier is situated 0.3 mile NE of the N breakwater head.

East of the petroleum pier is an area containing the naval base, fishing facilities, and several berths on the N side of Pier No. 5, which is reached via a channel showing a charted depth of 9.1m. A drydock is charted 0.4 mile NNE of the Petroleum Pier. Several small piers lie between the naval piers and Pier No. 5, has depths of 3.7 to 4.5m, but caution is recommended here as depths of 3m are charted close by.

Callao—Port Facilities		
Berth No.	Length	Depth
1A	178m	9.1m
1B	178m	8.8m
2A	178m	8.8m
2B	178m	8.2-8.8m
3A	178m	8.2m
3B	178m	8.5m
4A	178m	8.5m
4B	178m	7.3-8.5m
5A	187m	11.9m
5B	187m	10.3m
5C	183m	9.4-10.3m
5D	375m	11.0m
5E	195m	16.7m
7A	265m	11.6m
7B	265m	11.6m
9A	183m	6.5-9.1m
9B	183m	6.1-9.1m
9C	183m	5.8m
9D	183m	5.8-6.1m
9E	94m	5.0-6.1m
10C	138m	5.0-6.1m
10D	138m	5.0-6.1m
11A	138m	11.0m
11B	138m	11.0m
11C	138m	11.0m

Aspect

The Naval School, situated on Punta Punta, is a prominent yellow square building with regular rows of large square windows, surmounted by two radio masts. A light is shown from atop a building close by. A white stone water tower, standing about 0.5 mile NE of the school, is conspicuous.

The towers of Castillo Real Felipe, close S of the root of the S breakwater, are prominent as is a grain silo standing close E of the same point. Several conspicuous water towers, church spires, and chimneys are situated about the area. Cierro La Reglu, a conspicuous isolated hill 105m high, lies about 6

miles NNE of the point. A prominent aeronautical light is shown from the airport, about 3.3 miles NE of the harbor entrance. Lights stand at the ends of the N and S breakwaters.

Pilotage

Pilotage is compulsory. ETA should be sent 24 hours in advance. Pilots board in the pilot boarding anchorage, about 1.3 miles WNW of the harbor entrance. The port and pilot may be contacted by VHF channel 13 or 16.

Regulations

A Traffic Separation Scheme is located in the approaches to the port.

Vessels are not permitted to enter the harbor until the Port Captain's staff and the health officials have boarded it, and there is a berth waiting. The port officials will usually board day or night if the vessel is expected.

Vessels are required to report to Tramar on VHF channel 16 when 20 miles, 10 miles, and 4 miles from Isla San Lorenzo Light. Vessels also report to Tramar when passing the Outer Fairway Lighted Buoy.

It is prohibited to deballast oil and dump bilges into the bay; the same applies to refuse and waste in general.

Several prohibited zones have been established. Additional or later date information should be obtained from the port office. The current restrictions are, as follows:

- 1. Keep 1 mile off the military bases on the E coast of Isla San Lorenzo and 300m off the rest of the island.
 - 2. Keep 600m off Isla Callao.
- 3. Keep 300m off the buoys marking the aquaculture area in El Boqueron.
- 4. Keep 300m off Naval School harbor. Keep 150m off the Callao Naval base and official jetties.
 - 5. Keep 300m off all the warships in the reserved zones.

Anchorage

Twelve designated anchorages or mooring areas, best seen on chart, are located off the port, in 9 to 37m of water, sand and mud bottom. Their designated uses are, as follows:

- 1. Anchorage Area 1—Merchant vessels.
- 2. Anchorage Area 2—Fishing vessels, dredges and factory vessels in excess of 350 gross tons.
- 3. Anchorage Area 3—Inoperative fishing boats in excess of 50 gross tons.
- 4. Anchorage Area 4—Fishing boats in excess of 10 gross tons and less then 25 gross tons.
- 5. Anchorage Area 5—Bay boats (barges, tugboats, motorboats).
- 6. Anchorage Area 6—Inoperative merchant vessels and fishingboats.
- 7. Anchorage Area 7—Operational fishing boats in excess of 25 gross tons.
- 8. Anchorage Area 8—Tankers (oil tankers, gas tankers).
 - 9. Area of Pilot Standby Station (Pilot Station).

- 10. Anchorage Area for Nuclear-Powered Vessels and Conventional Ships—Vessels containing or transporting nuclear or radioactive materials.
 - 11. Security, Isolation, and Quarantine Area.
 - 12. Anchorage Area for Ships Earmarked for Scrapping.

A restricted area close S of the entrance channel offers anchorage to Peruvian naval and merchant vessels, in depths of 7.6 to 19.5m. Another reserved anchorage is reported to lie just S of the restricted area's SW border.

It was reported that vessels may occasionally be underway without lights within the restricted area.

Caution

Piracy is a menace and boarding attempts are made while vessels are underway, at anchor, or at a berth.

An extensive area containing submarine cables extends across the S approaches to the port.

A number of areas utilized for the testing of explosives exist around Isla San Lorenzo.

In the anchorages, jellyfish are so prevalent in April and July that underwater intakes may become clogged.

The periodic discoloration of the sea, known as "Callao Painter," is frequently experienced outside of the port. The hulls of ships may become discolored by a thick and dark slime which is caused by gases rising from the bottom of the bay; a nauseous smell is also emitted.

It was reported (1990) that several of the lighted aids to navigation were extinguished.

Callao to Matarani

3.39 Along the coast from Callao to Matarani, S to SW winds, known as "paracas," occur from noon to evening; these winds may hinder cargo operations at the coastal ports from August to September.

The currents offshore set N. In the vicinity of Isla Sangayan $(13^{\circ}51'S., 76^{\circ}27'W.)$, a set toward that island has been experienced. The currents generally follow the coastal trend and set N into the bays.

Punta Chorrillos (12°10'S., 77°02'W.) is located about 9.5 miles SE of Punta Punta. The coast between recedes SE forming Bahia de Miraflores, which is open to the weather. The land S of Punta Punta is low-lying and fronted by a pebble beach. Rocky T-headed breakwaters have been built at regular intervals here to protect the coast from flooding during stormy weather, which is most intense in the winter months. This low coast continues for 1.5 miles, then changes to cliffs of average height.

Cerro Morro Solar, about 1 mile SE of Punta Chorrillos, rises to an elevation of 279m and is one of the better defined natural features of this coast. The hill is oriented in a N-S direction, emerging abruptly from the sea, and is surmounted by a lighted cross. Punta Chorrillos is formed by an extension of the hills descending from the western side of Morro Solar, terminating sharply at the water's edge. Rocks lie up to 0.3 mile W of the point.

A main light is shown from a tower, 22m high, standing on the coast about 2.8 miles N of the point, and an aeronautical light is shown from an airfield about 2 miles E of the point. **Anchorage.**—Anchorage is available N of the point, in a depth of about 12m. Vessels should anchor at least 1 mile from the shore on the alignment of three beacons which are, from N to S, a statue, a planetarium, and a monument. Moderate-sized vessels may use this anchorage, but caution is advised as the bight has a tendency to silt and submarine cables extend seaward from the vicinity of the point.

3.40 Islotes Horadada, with two pinnacles and above and below-water rocks surrounding it, lies 5.8 miles WNW of Punta Chorrillos. Roca del Diabolo, on which the sea breaks heavily during bad weather, lies 0.3 mile N of the islet and has a depth of 2.1m. Shoal depths extend NE from the rock towards the coast.

Punta La Chira, rocky, sloping, and leaden-colored, is located about 2.3 miles S of Punta Chorrillos. Islote Pan de Azucar is an islet lying on a reef about 0.5 mile WSW of the point. Several small islets and rocks lie between the islet and the point.

Anchorage.—Two coves indent the coast S of Punta Chorrillos. The N of the coves, entered S of the point, affords sheltered anchorage to small vessels, in depths of 9.1 to 16.5m. The S cove, entered close N of Punta La Chira, affords sheltered anchorage, in 14.6m, between the entrance points.

The **Rio Lurin** (12°17'S., 76°54'W.) is located about 9 miles ESE of Punta La Chira. The coast between is formed by Playa de Conchan, a sandy beach backed by fairly high land. Anchorage can be taken, in 9.1m, about 1 mile off the head of a cove close S of the river mouth.

Isla Pachacamac (12°18'S., 76°54'W.), 108m high and the N of a chain of islets and rocks, is colored white and lies 1.5 miles off the Rio Lurin. Islote San Francisco, with a rounded summit, is the S and prominent of the group. El Corcovado, a reef about 1 mile long, lies with its N end 1 mile SE of Islote San Francisco. Rocas de la Vinda are two submerged rocks lying about 0.5 mile off the N islet. Sea and swell break heavily on these dangers and the shoals inshore of the group.

3.41 Conchan Oil Terminal (12°16'S., 76°56'W.) is situated about 670m offshore, 1.5 miles NW of the mouth of the Rio Lurin. Vessels calling at Conchan must first enter Callao for clearance and for taking on the pilot. All facilities, except dirty ballast, are available at Callao. Berthing is restricted to daylight hours only; sailing is permitted at anytime.

The one offshore tanker berth has two submarine pipelines. Vessels moor to three buoys in 18.5m of water; maximum size of vessel is 40,000 dwt, length 230m.

Conchan Mole, 630m long shows a red light on its pier head (12°15.2'S., 76°22'W.) situated close NW of the Offshore Terminal. Vessels up to 35,000 dwt 185m length can berth. The terminal can be contacted by VHF. A cement factory is situated at 1,000m NNE from the pier head.

Punta Chilca (12°31'S., 76°48'W.), about 15 miles SE of the Rio Lurin, is prominent with a steep cliffy face, 90m high, on its seaward side. The coast between is indented. With local knowledge, several coves affording anchorage can be entered along this stretch of coast. Rocks and reefs lie off the coves

entrance points. Depths of at least 9.1m exist within the coves, where landing is possible.

Caleta Pucusana (Puerto Chilca) (12°29'S., 76°48'W.) is a cove about 3 miles N of Puerto Chilca. Isla Chilca, from which a light is shown, protects the W side of the cove which is entered from N between the islet and coast. Rocks, fringing the islet and adjacent coast, restrict the cove entrance to a width of 0.3 mile. An islet lies about 91m off the SE side of Isla Chilca. Anchorage for small vessels can be taken in the middle of the cove, in depths of 9.1 to 12.8m, sand. A wharf, with two small landing stages, lies on the cove's W side

3.42 Punta del Fraile (13°02'S., 76°31'W.) lies about 37 miles SE of Punta Chilca. The point is the W side of a hilly promontory that has cliffy NW and SW sides. Cerro Sentinella rises above the point, and prominent, bluish-colored Cerro Azul rises close within the S limit of the cliffs. The coast between Punta Chilca and Punta Fraile is indented by a few coves. Dangers lie up to 2 miles offshore in places. The N part of this coast, as far as Cerro Calavera, is low, flat, and backed by hills inland. Cerro Calavera (Morro Calavera) (12°33'S., 76°46'W.) is a prominent, detached hill of black rocks with patches of sand and guano. The hill has a sharp peak and a sheer face to seaward. Between Cerro Calavera and the Rio Mala (12°41'S., 76°40'W.), the coast consists of low cliffs fronted by a sandy beach. Islets and rocks above-water lie up to 1 mile offshore. The mouth of the Rio Mala is marked by heavy breakers and a conspicuous hill rises 2 miles N.

Caleta Mala (12°43'S., 76°39'W.) is entered between Punta Chocaya (12°45'S., 76°39'W.) and a point about 3 miles NNW. Cerro Salazar is prominent close within the latter point. Punta Chocaya is low and fronted by rocks and foul ground. Small vessels can anchor on good holding ground of sand, sheltered from SE winds, in Caleta Mala, where the depth is 11m, about 0.3 mile offshore. The anchorage is subject to a heavy sea and swell during the winter months.

Isla de Asia, 123m high, lies 1 mile offshore, about 16 miles NW of Punta Fraile and is radar conspicuous. It is one of the most easily-identified objects on this part of the coast. There are several above and below-water rocks around the islet and between it and the coast N. A radiobeacon is located on the mainland 2 miles NE of the island.

3.43 Puerto de Cerro Azul (13°03'S., 76°31'W.) (World Port Index No. 14920) is situated in a cove within the N side of the promontory containing Punta del Fraile. The port, from which cotton is exported, is shallow and available only to coastal vessels. Local knowledge is required. Cargo is worked by lighter from a pier at the head of which a light is shown. Weather may prevent lighter operations between May and September. The terminal here was reported to be out of commission, and the wharf was in a poor state of repair. Pilotage is not compulsory.

The coast between Punta Fraile and the Peninsula Paracas, about 45 miles S, recedes to form a bight which is sheltered by the peninsula at its S part. The shore as far as the Rio Canete (13°09'S., 76°25'W.) is low and backed by a fertile valley. A sugar mill, standing N of the river mouth, is conspicuous. From the Rio Canete to the Rio Jaguay (13°23'S., 76°13'W.), the

coast consists of high, clay cliffs backed inland by very high hills. On approaching Bahia Pisco, the coast is low and sandy.

Puerto Tambo de Mora (13°28'S., 76°12'W.) a roadstead off the town of Tambo de Mora, is closed as a general cargo port. There are depths of 7.3 to 9.1m at 1 mile offshore of the lighter pier which had a depth of 1.8m at its head. Landmarks in town include a large white building on the beach, the church, and a large and a small cross together on a hill behind town. The chimneys and tanks of the fishmeal factories situated behind the wharf are visible from seaward. A radio mast is located on the coast N of Tambo de Moro.

Anchorage can be taken, in a depth of 10.4m, mud, about 1 mile offshore, with the white building and the crosses aligned 082°. This anchorage is generally secure except for S winds (paracas), which blow from noon to evening and raise a sea.

3.44 Islands and dangers off the Peninsula Paracas.—Islas de Chincha (13°38'S., 76°24'W.), a group of three small islands with several islets and rocks, lies 10 miles N of Punta Paracas, the NW end of the Peninsula Paracas. The islands are radar prominent. A light is shown from a tower on the summit of Isla Centro Chincha, the central and largest island of the group. The outermost danger of the group is a steep-to rock, with less than 1.8m over it, lying 1 mile W of the W end of Isla Centro Chincha. A 24m shoal lies about 3 miles ESE of the light tower on Isla Centro Chincha. All the islands and islets of the group are fringed by rocks.

Isla Norte Chincha, lying at the N end of Islas de Chincha, is marked by a high islet lying about 0.2 mile NW, and a rocky spit extending the same distance NE. A landing pier, situated at the NE side of Isla Norte Chincha, is approached on a SW heading between buoys which mark the outer end of dangers. Local knowledge is necessary. The preferred anchorage in the vicinity of Islas de Chincha is taken at the E and W entrance of the channel between Isla Norte Chincha and Isla Centro Chincha. There are least depths of 32.9m and 42.1m in the W and E entrances, respectively.

Isla Sur Chincha, lying at the S end of the group, is bound by rocks and reefs, some awash, extending up to 0.3 mile E and 0.5 mile W of the E and S sides of the island, respectively. A reef lies in the W entrance of the passage between Isla Sur Chincha and Isla Centro Chincha.

Isla Goleta, the highest of a group of three islets, is white in color and lies about 0.9 mile SW of Isla Sur Chincha. Rocks and shoals encircle the islets. Roca Chata, with a rock awash close NW of it, lies about 0.5 mile S of Isla Goleta.

Islas Ballestas, about 4.5 miles NNW of Punta Paracas, are three guano-covered islets and several adjacent above-water rocks. Islas Tres Marias, 1.8 miles S of Islas Ballestas, are three pointed rocks, of which the middle rock is the lowest. Less water was reported about 0.4 mile WSW of the S rock. Roca Saludo, steep-to, with a depth of 0.9m, lies 0.4 mile NE of Islas Tres Marias. The channel between Roca Saludo and Islas Ballestas is not recommended.

Isla Blanca, with two dangerous rocks lying about 0.8 mile W and WSW of it, is located about 5.5 miles NE of Punta Paracas. A light is shown from the island.

Isla Sangayan (13°50'S., 76°27'W.), about 3 miles W of the peninsular, is high, light-colored, cliffy, and usually shrouded in mist. From SW the island appears saddle-shaped. The N of a

group of rocks that lie up to 0.5 mile N of Isla Sangayan is high and shaped like a bowling pin. The island gives a good radar return at 24 miles. A light is shown from the SW point of the island. The island is covered with guano. Generally, it is enveloped in a layer of fog; this is cleared by sea breezes, leaving only a plume of mist over the summit. Foul ground extends at least 0.3 mile off the S and W sides of Isla Sangayan.

Pasaje El Boqueron (13°50'S., 76°25'W.), the passage between the Peninsula Paracas (13°52'S., 76°20'W.) and Isla Sangayan, is about 2.8 miles wide and reported clear of dangers except for Roca Pineiro, a steep-to pinnacle barely awash and always marked by breakers, lying about 1.5 miles S of the S extremity of Isla Sangayan. When a strong wind opposes the tidal current, a confused sea is generated in the area, rendering the rock difficult to make out. During such times the mainland side of the pass should be favored until the rock is passed.

3.45 Bahia de Pisco (13°44'S., 76°16'W.) is entered between Punta Paracas (13°48'S., 76°22'W.) and a sandy point about 13.3 miles NE. The bay is bound W by Islas Ballestas and Islas de Chincha. The E shore of the bay is sandy, with the Rio Pisco emptying into the bay near its NE extremity. On approaching Isla Sangayan from the N, a set toward land is experienced, probably caused by the current following the coastline into Bahia de Pisco.

Puerto de Pisco (13°43'S., 76°15'W.) is the old lighterage port of Pisco and is closed except for fishing vessels and tankers. Shipping functions have been taken over by Puerto General San Martin, situated about 4 miles SW, across the bay. However, all official and shipping offices are still situated at Pisco. A lighter pier, with a depth of 4.1m at its head, extends about 0.3 mile offshore at Pisco. A spit extending 1.5 miles from the coast has a depth of 4.6m at its outer end, 2 miles NW of the pier at Pisco. A 4.5m shoal, a wreck, and a 1.8m shoal lie 0.4 mile WNW, NW, and WSW, respectively, of the pier. Landmarks in Pisco include a radio mast and tower, the church with its square tower and spire, and a prominent, white hotel. Conspicuous tanks stand near the shore, about 2 miles SSE of Pisco. An airdome lighthouse, 14m in height, has been installed with a range of 14 miles.

A berth for tankers, consisting of mooring buoys, lies in depths of 8m about 1 mile offshore, 2.3 miles SSW of the pier at Pisco. A submarine pipeline extends from the berth to the shore. Another berth, connected to a submarine pipeline, lies about 0.5 mile offshore, 4 miles SSW of the pier at Pisco.

Anchorage.—Anchorage, according to draft, can be taken in suitable depths about 1.5 to 3 miles SW of the lighter pier. The bottom is mud, good holding ground.

Caution.—Anchorage No. 4 for tankships is located less than 1 mile S of the North/South Traffic Separation Scheme W of Pisco.

Bahia de Paracas (13°49'S., 76°16'W.) a southerly extension of Bahia de Pisco, is entered between Punta Pejerrey, the NE extremity of the Peninsula Paracas, and the coast about 2.5 miles ESE. The shorebank extends up to 0.8 mile off the shores of the bay. Hotel Paracas is a prominent feature at the SE side of this bay, which is formed S and W by the Peninsula

Paracas. Paracas is a resort and has several small piers for small craft. There are several facilities for fishing vessels along the E shore of the bay, including a designated anchorage area which may be seen on the chart.

3.46 Puerto General San Martin (13°48'S., 76°18'W.) (World Port Index No. 14910) has replaced Puerto de Pisco as the principal shipping port for the area. Situated close S of Punta Pejerrey, a sandy spit, the port consists of a marginal wharf on the NE side of the peninsula.

Winds—Weather.—Winds from the S, in the vicinity of the Peninsula Paracas, are called "paracas." They blow from noon to evening and are sometimes so strong that working cargo is very difficult, especially during August and September. Severe sandstorms occur in August, reducing visibility and stopping all cargo operations.

Depths—Limitations.—The continuous wharf consists of four berths, each 175m long. Vessels of up to 9.7m draft may be accommodated alongside. The port handles general cargo, containers, and bulk, and liquid bulk cargo.

Aspect.—Lights are shown at each end of the wharf. A main light is shown from Punta Colorado, 1.8 miles W of Punta Pejerrey, but is obscured within the bay.

Pilotage.—Pilotage is compulsory. Vessels should send ETA at least 24 hours in advance. The port can be contacted by VHF channel 16. Pilots board about 0.8 mile ENE of the lighted buoy moored off Punta Pejerrey. Pilots are also available for the offshore oil berth S of Pisco.

Anchorage.—The tanker anchorage lies about 3 miles NNE of Punta Pejerrey; it has charted depths of 14.6 to 17.3m.

The hazardous cargo anchorage lies about 1.5 miles NNW of Punta Pejerrey; it has charted depths of 18.9 to 21m. The explosives anchorage, with charted depths of 20 to 24m, lies close W of the hazardous cargo anchorage.

The waiting anchorage lies about 1 mile ENE of Punta Pejerrey; it has charted depths of 12.8 to 14.9m. Other anchorage areas, which lie close N and close E of Punta Pejerrey, have charted depths of as little as 10.9m. All of the anchorage areas are best seen on the chart.

Caution.—A restricted area has been established for thr Paracas Nature Reserve. The boundaries are best seen on the chart.

3.47 The **Peninsula Paracas** (13°52'S., 76°20'W.) is a bold promontory, highest at its SW end. It is connected to the mainland by a low, sandy plain. An area reserved for the Ministry of Fishing lies between Punta Paracas and Punta Colorado, and can best be seen on the chart. Candelabro de Tres Brazos, a figure resembling a candelabra, consisting of deep trenches in the hillside, is a prominent landmark situated 0.8 mile ESE of Punta Colorado. Punta Huacas (13°54'S., 76°24'W.), the SW point of the peninsula, is high, dark, and steep, with a white rock lying 0.3 mile S of it. Cerro Lechuza, about 1.5 miles NNE of Punta Huacas, rises to an elevation of 501m, with a sharp-pointed peak which is conspicuous in the approaches from S and W. Ensenada Lagunillas, entered 5 miles E of Punta Huacas, is a bay used by fishing craft.

The coast between Punta Huacas and Punta Carretas, about 18 miles SSE, recedes NE to form a bight. Salt is shipped in lighters from Caleta Salinillo (14°00'S., 76°17'W.), within the

bight. The holding ground here is bad. Isla Zarate, lying between 0.5 and 0.8 mile W of the inlet entrance, has vertical cliffs and a flat top. There are several above-water rocks near the islet. Roca Valdivia, submerged, and on which the sea breaks, lies about 1 mile WSW of the islet.

Punta Carretas (14°12'S., 76°17'W.), from which a light is shown, is the S extremity of a bold peninsula which extends 5 miles S from the mainland. Rocks fringe the point. Cerro Cerretas, the very high summit of the peninsula, rises about 2 miles N of the point.

Bahia de la Independencia (14°14'S., 76°10'W.) is entered between Punta Carretas and Punta Quemado, 11 miles SE. It recedes about 3.5 miles NE from Punta Carretas. Isla Independencia (Isla Viejas) and Islas Santa Rosa lie in the SE half of the entrance. Morro Quemado, a high hill, is a landmark rising about 1.5 miles SE of Punta Quemado. This hill, 605m high, slopes as a ridge to the point, is lighter in color than other peaks in the area, and has a thick cap of reddish earth.

The bay can be entered, but local knowledge is required, through N and S entrance channels, the former being wider, deep, and clear of dangers; the S channel, about 0.8 mile wide between Punta Quemado and the SE of the Islas Santa Rosa, has a least depth of 12.8m. Soundings within the bay give a least depth of 5.5m where examined. Tidal currents set N into the bay and are strong following fresh S winds. Isla Independencia is cliffy and has a remarkable hill at its SE end, which is joined to the island by a low, narrow isthmus. Islas Santa Rosa, two white-colored, level islets connected by a suspension bridge, lie near the end of a reef which extends 1.8 miles SE of the SE end of Isla Independencia. Numerous rocks and breakers lie off the SW sides of the islets. A shoal, with depths of 7.9 to 8.5m, extends 2.5 miles N from the N end of Isla Independencia. There are fishing villages on the shores of the bay.

Anchorage can be taken throughout the bay. A vessel anchored in 32.9m, mud, good holding ground, with the high-est hill on Isla Independencia bearing 232°, distant 1 mile.

Caution.—The Paracus Nature Reserve encloses the bay. The limits are best seen on the chart.

3.48 Punta Dona Maria (14°40'S., 75°55'W.) lies about 25 miles SSE of Punta Quemado. The coast between is both rocky and sandy, and backed by hills. The few dangers along the coast lie close offshore. Punta Dona Maria, from which a light is shown, is low, rugged, and dark with patches of guano. Punta Azua, 10.5 miles NNW of Punta Dona Maria, is a high bluff, with a low, rocky point extending off it.

Cerro La Mesa de Dona Maria Francisca (14°41'S., 75°50'W.) rises to 597m and is a prominent, truncated, conical mountain which is visible in good weather from far offshore.

Islotes Infiernillos, a group of islets and above and belowwater rocks, extend up to 1 mile WNW of Punta Dona Maria. A disused light structure stands on the largest islet. Roca Mairo, a dangerous detached rock with a depth of less than 1.8m, lies 1.5 miles WNW of the largest islet.

Punta Olleros lies about 13 miles SE of Punta Dona Maria. Anchorage, with no shelter, can be taken in Caleta Olleros, situated close N of the point which is fronted close SW by an islet and pinnacle rock. There is a depth of 12.8m, 0.3 mile off-

shore, in the anchorage. There is a landing pier at Caleta Lomitos, about 4 miles NW of Punta Olleros.

Cabo Nazca, about 18 miles SE of Punta Olleros, is a high, dark bluff with two sharp hummocks at its base. The cape gives a good radar return at 20 miles. Caleta Nazca, about 2 miles N of Cabo Nazca, is backed by white sandhills. Landing is possible during early morning hours, but only in an emergency, as strong S winds prevail later in the day. There is a 14.6m shoal 5.5 miles SSW of the cape, and a 20.1m shoal was reported to lie about 5.5 miles SW of the cape.

Punta Santa Ana (15°09'S., 75°23'W.), about 14 miles SE of Cabo Nazca, is rock-fringed, cliffy, dark, and radar prominent. Cerro Huricangane (Criterion) rises to 1,781m, 12 miles NE of the point and is a prominent landmark. A rock, with a depth less than 1.8m, was reported to lie 6 miles W of Punta Santa Ana.

Punta San Nicolas is located about 9 miles SE of Punta Santa Ana. The point is the W extremity of a peninsula 2.3 miles long, which constricts to a width of 91m about 1 mile ESE of the point. Guano covers the point and outer peninsula. A light, with a racon, is shown from a tower about 0.5 mile SE of Punta San Nicolas. The point is fringed on all sides by above and below-water rocks for at least 0.3 mile offshore; an islet lies 0.2 mile W of the light tower. A 5.5m patch lies 1.3 miles SSE of the point and shoals of similar depth lie 4 miles NNW of the point.

Caution.—A wreck lies approximately 1.5 miles NNE of Punta San Nicholas.

3.49 Bahia San Nicolas is entered between Punta San Nicolas and Punta San Fernando, lying 1.3 miles ESE of Punta Santa Ana. The NE shore of the bay is backed by very high tableland which extends SE.

Puerto San Nicolas (15°15'S., 75°14'W.) (World Port Index No. 14895) is situated on the S shore of Bahia San Nicolas, about 1.3 miles ESE of Punta San Nicolas.

Depths—Limitations.—The pier, on the S side of the bay, lies in a N/S; it is 305m long and 15m wide. The deck is 4m above MLW. There is a dolphin at the N end, with a diameter of 15m, and with a connecting bridge 45m long. This dolphin is used for the stern line of vessels over 274m in length. It is fitted with an electric winch and three large bollards. Vessels berth with bows to the S.

Fendering on both sides of the pier is made of laminated lumber and rubber, keeping vessels 1.5m off the concrete pier.

On the W side the depth is 19m, and up to 91m westwards, except on the anchor pocket, which is 21m deep, 76m long, and 91m wide. When docking, two anchors are let go in the pocket to prevent any collision of the ship with its own anchors. The bottom is mud and sand.

On the E side, the original depth remains at 12.8m at the shore end and 18m at the seaward end. Vessels use their own mooring lines, while on the W, heavy surge lines are compulsory, and may be hired.

The ore ship loader has a straddle clearance height of 4.26m and a width of 3.65m.

The ore loader operates on the W side only, but iron ore slurry can be loaded on either side.

Vessels, with general cargo to discharge, use the E side. Discharge of bulk petroleum can be made at either E or W berths.

While alongside, engines must always be ready for immediate use, and sufficient crew on deck to tend mooring lines and heave in the slack as loading progresses. If this is not done, loading will be stopped and vessels taken out of berth.

Pilotage.—Pilotage is compulsory, using company pilots, who will remain on board during periods of swell; accommodation should be made available. A starboard gangway must be rigged on arrival for authorities; official time of arrival is that of anchoring. Official port hours are 0800-1200 and 1300-1700, but reception in overtime can be made at any time. Pilots board ships about 1 mile N of the pier head. An ETA should be sent to the agent and mining company 5 days, 2 days, and 1 day in advance. Vessels should contact the port by VHF channel 16, 4 hours prior to arrival. It was reported that pilots for Puerto San Juan are also available here.

Regulations.—An IMO-adopted Traffic Separation Scheme lies in the approaches to Puerto San Nicolas and can best be seen on the chart.

Anchorage.—Eight anchorage areas are available as shown on the chart. Anchorage Area 1 is reserved for naval vessels. Anchorage Area 2 and Anchorage Area 3 are for merchant vessels. Anchorage Area 4 and Anchorage Area 5 are reserved for vessels carrying hazardous cargo. Anchorage Area 6 and Anchorage Area 7 are quarantine anchorages. Anchorage Area 8 is for vessels under repair.

3.50 Punta San Juan is located about 8 miles SE of Punta San Nicolas. Bahia San Juan is entered N of the point. The S side of the bay is cliffy, whereas, the E side and head is sandy. A main light is shown from a tower, 13m high, standing 0.5 mile SE of the point.

Punta Parada (15°22'S., 75°12'W.), the outer end of a peninsula extending 0.8 mile SSW of Punta San Juan, is radar prominent. Cerro Acari (El Huevo), isolated and very high, rises steeply above cliffs and is a conspicuous landmark 5 miles NNE of the point. Roca Negra, about 1.8m high, lies between 0.5 and 0.8 mile WSW of Punta Parada; a 6.4m patch lies about 0.8 mile SW, and a reef, awash, extends 0.4 mile NW and 0.3 mile SSE of Roca Negra.

Caution.—Local magnetic anomalies have been reported off Bahia San Juan.

3.51 Puerto San Juan (15°20'S., 75°10'W.) is situated at the head of Bahia San Juan, about 1.5 miles E of Punta San Juan. The port was important for its iron ore shipments from mines nearby, but this function is now carried out by San Nicolas. The Peruvian Navy controls operations of the port, which functions for area cargo discharge.

It was reported that the piers within the port were destroyed and the port was closed to commercial shipping.

Anchorage, sheltered from swell, can be taken in the SE part of the bay, in depths of 27.4 to 36.6m, good holding ground. It is recommended that both anchors should be used due to occasional strong and shifting winds.

Punta Lomas (15°33'S., 74°51'W.) lies 23 miles SE of Punta Parada. Several dangers front the coast between the points and may be seen on the chart. Islote Lobo, above-water, lies about

1.5 miles SE of Punta Parada. Rocas Tres Marias are three above-water rocks which lie on a reef that extends about 0.5 mile off an unnamed point located 4.5 miles SE of Punta Parada.

Punta Lomas, marked by a light, is the extremity of a prominent rocky peninsula, projecting about 1 mile SW from the mainland, to which it is joined by a sandy isthmus. The peninsula consists of a series of very black rocks, higher toward the point; from the offing it appears as an island. Above and below-water rocks fringe the point. A detached rock, with less than 1.8m, lies about 0.4 mile W of the point, and a 14.6m shoal lies 1.5 miles WNW of the light structure.

Anchorage can be taken, in depths of 9.1 to 27.4m, good holding ground of sand, in Rada de Lomas, just W and N of Punta Lomas peninsula. The anchorage is exposed to sea and swell which causes ships to roll heavily if not kept head to the sea. A stranded wreck is ashore about 1 mile N of Punta Lomas. The roadstead is the port for Acari, which is situated up the Rio Lomas about 14 miles. Cargo is lightered from a pier at the head of the roads.

3.52 Puerto de Chala (15°52'S., 74°14'W.) lies about 40 miles SE of Punta Lomas. The coast between is low, sandy, and on which the surf breaks heavily. Rivers emptying into the sea between steep hills flow through green valleys that are visible from offshore. Punta Chavina, about 11 miles SE of Punta Lomas, appears as a rock from the offing; it serves as a good radar target. A white islet and rocks lie on a reef extending 0.5 mile off the point. A patch, with a depth of 11m, was reported to lie 6.5 miles SW of Punta Chavina. Punta Chala, about 18 miles SE of Punta Chavina, is radar-prominent, being high and rocky. Monte Chala is a prominent mountain range with several peaks which terminate in Punta Chala.

Puerto de Chala is a small, coastal port from which cattle and minerals are shipped. The settlement, built on high ground, has a church with towers which is conspicuous from offshore. A main light is shown from a tower standing on high ground in port.

Anchorage can be taken, in a depth of 27.4m, rock, with the church bearing 081°. The anchorage is open to S winds, so that vessels may roll heavily. Vessels should not proceed within the rocks which lie up to 0.5 mile off the E and SE shores of the roadstead. The outer rocks are steep-to and usually marked by breakers.

3.53 Punta Atico (16°14'S., 73°43'W.) is located 38 miles SE of Puerto de Chala. The coast between is backed by barren hills, intersected by rivers emptying into the sea. Punta Atico, colored white, is the S end of an irregular rock-fringed peninsula, about 1 mile long, which is joined to the coast by a low, sandy isthmus. The point is radar prominent. A light is shown from a tower, 18m high, standing on the point, and a prominent television mast stands about 0.4 mile NNE of the light tower. A radar conspicuous beacon, consisting of a mast with two parallel reflectors, stands near the head of East Cove, on the E side of the isthmus. Landing can be made in West Cove, on the W side of the isthmus. There is a rock, awash, in the cove entrance and another rock, with a depth less than 1.8m, lying near the head of the cove.

A depth of 11.9m was reported to lie 8 miles offshore, 24 miles WNW of the light tower. A depth of 14.6m was reported to lie about 12 miles W of the light tower. A depth of 11m lies about 9 miles W of the light tower.

Atico, a small town, is situated 2 miles up the Rio Atico, which flows into the sea 4.5 miles E of Punta Atico.

Atico is a lighterage port equipped with eight lighters, capacity 500 tons. Lighters are loaded over a chute.

Pilotage.—Pilotage is compulsory. VHF channel 16 is used. The working hours at the port are 0800-1200 and 1300-1700.

Anchorage.—There is an anchorage area in both the E and W coves offshore; it is exposed to S winds.

Anchorage can be taken by ships loading fishmeal from barges in a position about 1.8 miles ENE of Punta Atico, where depths are ample. Anchorage can also be taken, in depths of 34.7 to 36.6m, about 0.3 mile off the W side of the peninsula in Rada de Atico (16°13'S., 73°43'W.). Small vessels anchor off the head of West Cove, in 12.8 to 16.5m. The preferred anchorage in East Cove, open SE, is in 18.3m about 0.5 mile offshore.

3.54 Punta Pescadores (16°24'S., 73°17'W.), a low projecting bluff, lies about 26 miles SE of Punta Atico. It is identified from the S by four, high, dark cliffs, of which the W cliff is the highest. La Planchada Light stands about 4 miles E of Punta Pescadores. Roca Flara (Flora), which dries, lies 1 mile S of the point. A depth of 33m was reported to lie about 7 miles SW of the Roca Flara. Caleta Planchada, entered 5 miles ESE of Punta Pescadores, affords sheltered anchorage to fishing vessels. Caution should be exercised when entering the bay as it has not been surveyed recently. A fishmeal factory, with submarine pipelines extending up to 0.2 mile off it, lies within the bay.

The Rio Ocona flows through a valley in an area where cotton is grown and empties into the sea about 10.5 miles SE of Punta Pescadores. Caleta la Chira, about 4.5 miles SE of the river mouth, is an open cove with Isolote Foca, high and rockfringed, near its head. The shores of the cove and adjacent coast consist of high, sheer cliffs which are radar prominent. The S entrance point of the cove is identified by a cove-shaped hill that rises just E of the point and above the cliffs. Anchorage can be taken, in 14.6m, 0.5 mile WNW of the S entrance point.

Punta Camana (16°53'S., 72°48'W.), about 17 miles SE of Caleta la Chira, is sandy and projects S from the middle of a valley which is 2 to 3 miles wide near the coast. The valley, with its rich colors, contrasts with the barren land on each side of it. The Rio Camana flows into the sea about 1 mile SE of the point. Monte Fuerte, a prominent hill resembling a fort, rises close E of the river mouth.

A depth of 27m lies about 9 miles WSW of the river mouth. Morro Siguas, a conspicuous peak, rises from the plain about 22 miles ENE of Monte Fuerte. Camana Light is shown from a tower on Punta Pano, about 11 miles ESE of Punta Camana.

Caleta Quilca (16°43'S., 72°26'W.) is located about 17 miles ESE of Monte Fuerte. The cove, about 0.2 mile wide at its entrance, decreasing to 0.1 mile within, has depths of 25.6 to 5.5m from entrance to head. A light is shown from Morro El Castillo, the dark red cliff forming the W entrance point. Punta Quilca, off which lies Roca Foca, an above-water rock, is located about 1 mile SE of Morro El Castillo. The point is

radar prominent. The cove is suitable for small craft only and local knowledge is required. A valley descends steeply to the coast close NW of Punta Quilca and the Rio Quilca enters the sea nearby.

Anchorage.—Several mooring buoys for lighters lie between the anchorage and Morro El Castillo. Vessels can anchor about 64m off the lighter buoys, in depths of 34.7 to 36.6m, with the church bearing 027° and Roca Foca bearing 140°. Small craft can anchor off a landing pier.

3.55 Punta Hornillos (Cornejo) lies 12 miles SE of Caleta Quilca. The coast between is regular in outline with very small coves backed by hills and low black cliffs. Rocks fringe the shores in many places. The point, a high, reddish colored projection, resembles a two-tiered fort. Three rocks, on which the sea always breaks, lie close off the point. A rock, with a depth of less than 1.8m, lies about 1.3 miles SSW of the point. It was reported that a shoal of 19.5m lies about 3.5 miles SW of Punta Hornillos.

Punta Islay (17°01'S., 72°07'W.) is located about 13 miles SE of Punta Hornillo (Cornejo). It is the center of three points and may be easily identified by its dark color which contrasts with the whitish type of lava that is seen along the coast. The point projects slightly SW under some white patches of the hillside. A main light is shown from a tower, 13m high, standing on the point. Several rocks and islets lie off the point up to 0.8 mile seaward. Bahia de Matarani is entered about 1 mile NNW of Punta Islay.

Matarani (17°00'S., 72°07'W.)

World Port Index No. 14860

3.56 Matarani, a small, artificial harbor at the head of Bahia de Matarani, can accommodate large ocean-going ships alongside the principal wharf. The harbor affords Bolivia with a free port for incoming general cargo and the shipment of Bolivian ore. Matarani is the main port for the S part of Peru. There are no dwellings or commercial offices in port; all installations are controlled by the government. Stevedores are transported to and from Mollendo, about 9 miles distant. The port is subject to congestion, especially when large bulk grain ships are discharging, as they take up more than one berth, thus reducing port capacity.

Winds—Weather.—The prevailing winds are S to SW. The strong winds that occur often necessitate the use of two tugs to turn the ship around at the harbor entrance. A heavy swell and surge is common to the area; in winter the swell may prevent entry and departure.

Tides—Currents.—The tidal range is about 0.6 to 0.8m. Currents in the bay and harbor are negligible.

Depths—Limitations.—The entrance fairway, leading SE between breakwater heads, has a depth of 13.1m. Pilots will not take a ship over the 11.9m rocky patch in the entrance unless it is high tide and there is no swell. A 3.3m patch lies close inside W breakwater head and is marked by a buoy.

A ro-ro terminal at the SW end of the basin has a 90.5m berthing face. The principal wharf is situated along the SE shore of the harbor. It is 540m long and has depths alongside between 9.6 and 13m. It is a concrete marginal wharf with a

20m wide apron and provides four mooring berths where three ships of more than 170m can make fast. A small wharf for fishing vessels lies in the NE part of the harbor. An offshore oil berth in a 20m depth, 5 miles SE of the harbor, serves a tank farm close S of Mollendo City. Tankers drawing up to 16m can be accommodated.

Aspect.—Islotes Alvizuri consists of several islets lying in the S part of Bahia de Matarani. The islets are high and steepto, but vessels should not attempt to pass between them without local knowledge. Pasaje de Islay, about 0.1 mile wide, with a least depth of 15m, leads NNE through the islets. A wreck, marked by a buoy, lies close NE of the islets.

The harbor is enclosed by two breakwaters with an entrance 120m wide, the W of which extends NNE for about 0.3 mile, then forms an elbow extending E for about 46m. The E breakwater extends about 137m W from the NE shore of the harbor. An 11.3m patch lies about 146m NNW of the W breakwater head. The harbor entrance is about 119m wide between an obstruction off the E breakwater head and a 3.3m rocky patch marked by a lighted buoy, lying close off the W breakwater head. Vessels can enter or leave at any time, weather permitting, but entering is usually not worthwhile between 2200-0500.

Cerro Islay, dark, high, and with a bell-shaped peak, lies about 5 miles NNE of Punta Islay. This peak is a good mark on a S approach to port when the area is fog-bound. A statue and a water tank situated in the vicinity of the range markers are visible on nearing the harbor, as is a large grain elevator on the wharf.

A lighted range leads to the harbor entrance. A light is shown from an islet lying close off the shore about 0.2 mile N of the W breakwater head.

Pilotage.—Pilotage is compulsory. Pilots meet vessels 2 miles W of the harbor entrance. A berthing master for Mollendo Oil Berth is obtained 1.5 to 2 miles N of Ponce Islet. Contact can be made via VHF channel 13, 14, or 16. Tugs also meet vessels at the boarding area and are necessary to turn vessels in the harbor entrance. The ETA should be sent to the Port Captain 24 hours in advance.

Anchorages.—Anchorage can be taken, in depths of 50 to 60m, sand, about 0.3 mile NW of the root of the W breakwater. Fishing vessels anchor within the NE corner of the harbor.

Caution.—Numerous fishing vessels may be encountered in the vicinity of the port and moored near the breakwaters.

Matarani to Arica

3.57 Puerto Mollendo (17°01'S., 72°02'W.) (World Port Index No. 14850), the lighterage port of Mollendo, about 6 miles ESE of Punta Islay, no longer engages in shipping operations except for the discharge from tankers of clean petroleum products at the offshore moorings. The breakwater (mole) and landing wharf in Puerto Mollendo have been destroyed. All cargo operations are now carried out at Matarani.

An oil terminal, with prominent tanks, is situated close E of the town. An offshore tanker berth, consisting of four mooring buoys, lies about 0.3 mile S of the terminal and is connected to it by a submarine pipeline. Pilotage is compulsory and pilots board about 1 mile from the berth. Pilots are available from

Matarani. The vessel's ETA must be sent through Callao at least 24 hours in advance.

It is reported that vessels with drafts up to 12.2m can be handled. At times, the berth is closed due to heavy swells.

A church, with two conspicuous spires, stands in the town. Volcan Misti, about 60 miles NE of Puerto Mollendo, is a conical mountain covered with snow, and is reported visible in clear weather from 100 miles offshore.

3.58 Punta Bombon, close to the mouth of the Rio Tambo, is located about 13 miles SE of Mollendo. The point, low and brush-covered, is the outer end of the alluvial plain at the entrance to Valle de Tambo. The point should be given a wide berth. Valle de Tambo is fertile, contrasting sharply with the steep, barren cliffs that extend along the coast on either side. A high peak is prominent about 9 miles NNW of Punta Bombon.

Cabo Peje Perro, a 579m promontory, rises about 10 miles SE of Punta Bombon. Caleta Cocotea, 3 miles SE of the cape, affords anchorage, in a least depth of 14.6m, but there is usually a rough sea in the cove. Two high islets lie close off the coast, about 1 mile SE of the cove.

Punta Coles (17°42'S., 71°23'W.) is located about 54 miles SE of Puerto Molendo. The coast between is regular in outline and backed generally by hills intersected in places by valleys.

Punta Coles is a low, sandy spit extending from the base of a high tableland. Above-water rocks lie on detached foul ground lying 0.5 mile SW of the point. From the offing the point appears as an island. A main light is shown from a tower, 15m high, standing on the point. The coast N of the point is fronted by several above and below-water rocks.

Punta Sopladera is located 11 miles N of Punta Coles. Four conspicuous chimneys, which emit smoke, stand close N of the point at the South Peru Copper Company installation; they serve as an excellent landmark.

An offshore tanker berth, consisting of four mooring buoys, lies about 0.3 mile offshore close N of Punta Sopladera. A submarine pipeline connects the berth to the shore. Vessels approach the berth heading SE on the alignment of two beacons standing about 0.3 mile ENE of the point. Vessels are secured at the berth heading SW. Pilotage is compulsory; vessels are required to call at Puerto Ilo for clearance and to embark the pilot. It is reported that the berth lies in depths of 24m, and that tankers of up to 45,000 dwt, with drafts of 15.2m, can be accommodated.

3.59 Puerto Ilo (17°38'S., 71°22'W.) (World Port Index No. 14840), the S port of Peru, is situated about 4.3 miles NNE of Punta Coles and mainly exports fishmeal and minerals.

Winds—Weather.—Southwest winds prevail and at times cause a surge and swell that make alongside conditions difficult, especially between June and September. There may be some days when ships are unable to berth because of sea conditions.

Depths—Limitations.—The port consists of a roadstead off the town and two principal piers named Muelle Nuevo ENAPU and Muelle SPCC. Muelle Fiscal, a small pier in a cove off the N end of the town, is used by lighters.

Muelle Nuevo ENAPU extends WSW from a position 0.2 mile W of Muelle Fiscal. The pier offers four berths with alongside depths of 5.5 to 18.3m. It handles general cargo and

has berths on both sides. Depths on the N side range from 7.3m at the inner end to 18.3m at the outer end, and on the S side from 5.5m at the inner end to 16.4m at the outer end. Leading lights, in line bearing 076° , may be of assistance approaching this pier.

A rock, with a least depth of about 10m, has been reported to lie between 20 and 30m off the S berth and about 120m from the seaward end.

Muelle SPCC, 183m long, extends WNW from a rock breakwater. There are depths of 10 to 16m alongside the pier, which is used exclusively for the export of copper from the refinery.

A group of six mooring buoys has been established off Corralitos, 450m N of Punta Cata Cata. No details of their function are available. A stranded wreck, the position of which is approximate, lies close NW of the mooring buoys.

Aspect.—A conspicuous group of oil tanks stands in the N part of the port. Range lights, which may best be seen on the chart, lead to the berths on the two main piers.

Pilotage.—Pilotage is compulsory and should be requested via VHF at least 2 hours prior to arrival. Pilots embark in the vicinity of the anchorages or about 0.8 mile W of the pier heads. VHF channel 16 is used.

Regulations.—An IMO-adopted Traffic Separation Scheme lies in the approach to Puerto Ilo and can best be seen on the chart

Anchorage.—Designated anchorage areas for various types of vessels lie offshore and may best be seen on the chart. Tankers should anchor 1.8 miles NW of Muelle Nuevo ENAPU, cargo vessels should anchor 1.3 miles WNW of Muelle Nuevo ENAPU, dangerous cargo vessels should anchor 2.3 miles W of the piers, and quarantine vessels should anchor 2 miles WSW of the piers.

Caution.—A 3.6m patch, marked by a lighted buoy, lies 183m SSW of the head of Muelle SPCC.

Groups of rocks, marked by a lighted buoy, extend up to 0.4 mile seaward from a point on the shore about 0.5 mile S of the root of Muelle SPCC.

Lighters moored inshore of the offshore tanker berth are used by fishing craft which frequent the area.

Shoaler depths than charted may be encountered up to 0.5 mile from shore from Pena Blanca SW to near Punta Coles.

3.60 Rada de Arica (18°29'S., 70°20'W.) lies about 75 miles SE of Punta Coles. The coast between is fairly regular with fringing dangers lying within 0.5 mile offshore. From Punta Coles to Punta Sama, about 33 miles SE, the coast is composed alternately of sandy beaches and low cliffs, backed by tableland.

Caleta Ite (17°54'S., 70°57'W.), a cove about 1 mile wide, affords a landing place except during autumn and winter, when rough seas prevail. The Rio Locumba flows into the sea through a fertile valley and empties through a beach at the NW side of the cove. A reef extends from the N shore of Caleta Ite. An anchorage for vessels carrying dangerous cargo is found off Playa del Palo.

Punta Sama (18°00'S., 70°53'W.) is the extension of a spur leading W from Morro de Sama, a bold rock-fringed, dark promontory that is the most conspicuous headland along this

coast. A reef, on which the sea breaks at times, lies off Punta Sama. A light is shown from a tower on Punta Sama.

Anchorage.—Anchorage may be taken NW of the reef extending from the N shore of Caleta Ite, in a depth of 18.3m, sand, with Punta Sama bearing 145° and a road that is cut through the dark hills behind the cove bearing 015°.

Small vessels may anchor in Caleta Sama, just N of the point, in depths of 16.5 to 21.9m.

3.61 Punta de la Quiaca (18°05'S., 70°46'W.), a low, sandy tongue, with cliffs close N of it, is fronted by an abovewater rock lying close SE of it. The coast between the Rio Juan

Diaz (18°10'S., 70°40'W.) and Arica consists of a sandy beach. It is backed at its NW end by the heights of Cerros de Juan Diaz and Cerro Negro, rising 5.5 miles E of the Rio Juan Diaz. Los Palos Light is shown at the mouth of the Rio Molles (18°18'S., 70°26'W.).

La Concordia Light (Peru) (18°21'S., 70°23'W.) is shown at the coastal frontier between Peru and Chile. La Concordia Light (Chile) is shown about 1.3 miles E of its namesake.

An aeronautical radiobeacon is situated about 2 miles E of La Concordia Light (Chile).

The port of Arica is situated about 8 miles SSW of the coastal frontier and is described in paragraph 4.2.